

COOK'S ENDEAVOUR

A Voyage of Discovery Across the Curriculum

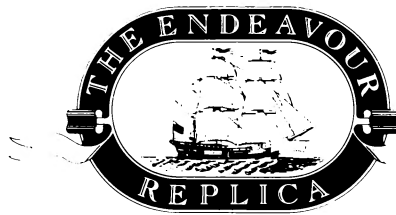


A gift to the nation from Bond Corporation.



Reproduced from "The Exploration of Australia" written by Michael Cannon courtesy of Reader's Digest.

COOK'S ENDEAVOUR



A voyage of discovery across the curriculum

Credits

Cook's Endeavour was designed by Bruce Dixon with Paul Duggan, Sarah Peckham and Mike Lefroy.

Programmers: BBC version: Taka, Apple version: Grahame Willis, IBM version: Jon O'Brien, Earlier version: Paul Duggan

Title Screen and Support Materials: Sarah Peckham

Project Management: Bruce Dixon

Layout Design and Illustrations: Sarah Peckham and Helga Binder

Program Documentation: Sue Dyson, The Quill Consultancy

Research Coordinators: Sarah Peckham and Mike Lefroy

Cover Design and Illustration: Turner Graphics

Evaluation and Trialling: Greg Harding

Production Support: Stuart Uhlhorn

Printing and Artwork: Publicity Works, Turner Graphics

Photography: John Roberson

Special thanks to all those who provided support to the team with research details, in particular Dr Alan Frost for vetting the historical accuracy of the reference material; David White, Chief Naval Architect for the Endeavour Replica Project; Peter Petroff, Sailmaker for the Endeavour Replica Project; Captain John Lancaster, Endeavour Replica Guides Coordinator; John Longley and Mike Lefroy. Also, we would like to thank all the students and teachers who assisted with testing and trialling.

Cook's Endeavour has been developed and published by Softime Publishing; a company specializing in the development of quality educational software. At Softime, we work with experienced teachers and designers to develop comprehensive educational resources. We use a team of both in-house and freelance authors and programmers to develop packages which offer teachers unique resources to extend their ideas for activities across a range of curriculum ideas.

ISBN 0 9587776 3 2 (BBC version)

ISBN 0 9587776 2 4 (Apple version)

ISBN 0 9587776 4 0 (IBM version)

All right reserved. This publication, consisting of packaging, books and disks is copyright, and therefore may not be copied in any way. No part of this publication may be reproduced, transcribed or transmitted in any form or by any means whatsoever, or stored in a retrieval system without the written permission of the owner of the copyright, unless otherwise expressly stated.

© Softime Australia Pty Ltd and Endeavour Replica Pty Ltd 1989

Contents

- 5 Introduction
- 6 The Endeavour Replica Project
- 7 What's in the Cook Resource Kit

PART A

- 9 TEACHER REFERENCE
- 11 What the Kit has to Offer
 - 11 Content Goals
 - 11 Learning Objectives
- 12 Overview
 - 12 How the Cook Resource Kit works
 - 13 A Sample Outline of Lessons
- 15 Learning to use the Software
 - 15 Registering a Crew
 - 16 Seamanship & Ship Rating
 - 17 The Port Screen
 - 18 Setting a Course
 - 19 The Sailing Screen
 - 19 Port Information
 - 20 Supply Levels
 - 21 Checking the state of the Ship
 - 22 Repairing the Ship
 - 22 Checking the state of the Crew
 - 23 Getting more Crew
 - 23 Program Options
 - 23 Events
 - 24 Saving a Voyage
 - 25 Quitting
 - 25 The Certificate
- 27 THE ACTIVITIES
- 29 Introduction
- 29 The Longitude Puzzle
- 30 The Rio Adventure
- 31 The Transit of Venus
- 31 Anchoring at Botany Bay
- 33 The Great Barrier Reef Maze
- 34 In Batavia

35	TEACHER OPTIONS
37	Software Options
37	How the Crews are set up
38	Selecting the Teacher Options
38	Altering a Crew
39	Deleting a Crew
39	Altering Details of a Supply Item
40	Printing Crew, Supply or Port Details
42	Showing or Hiding the Demo Crews
43	Different Ways to use the Package with your Students
43	In groups with 1 or 2 Computers
48	With the Whole Class
49	Before they Sail
49	Preparing Students for their Voyage
51	A Suggested First Lesson
53	Design Assumptions
53	The Map
54	Units for Supplies
54	Events on the Voyage
55	Finding a Port
55	The Rating System

PART B

57	SPECIFIC CURRICULUM ACTIVITIES
59	Activities for various curriculum areas
60	History
62	Geography
63	Mathematics
64	Science
66	Art
67	Social Studies
68	Drama
69	STUDENT RESOURCE SHEETS
79	CREW PROFILES
117	INFORMATION CARDS
185	ENRICHMENT IDEAS AND ACTIVITIES

Introduction

Discovering history
rather than just
learning about it

The voyages of Captain James Cook and his crew have been a part of our school curriculum for as long as we have had a curriculum in Australian schools. There has always been a desire by teachers to convey to students the achievements of explorers of those times, particularly Cook, yet we have often been unable to convey the magnitude of the challenges faced by him.

Cook's Endeavour is a Resource Kit of activities and ideas which can be used by teachers to help students better understand and appreciate the conditions facing explorers of those times. It includes reference material, activities, and a computer disc which allows students to simulate the voyages of Cook and other early explorers of that time.

The learning this kit initiates in your classroom will demand active involvement by your students, so that they may have some understanding of what Cook and his crew experienced. It offers students an opportunity to gain a unique perspective on those historical events, almost as a part of that history.

In the roles of Captain and crew on board the *Endeavour*, the students are given a set of basic instructions and a 1760's world map. They must then set about equipping their ship for a voyage. How will they prepare for the voyage? How will they plot their course? The discovery begins.

Some students will explore rather adventurous routes, and in doing so may still return to England, whilst there will be those poor unfortunates who in seeking to follow Cook, may chance upon a storm or tragedy not encountered by Cook, and fail to return.

Throughout their voyage students must make important decisions about supplies, morale, navigation and events which arise. They will need to discuss these matters carefully amongst themselves, plan very thoroughly, and keep good records of their journey at all times.

In this way they are hopefully not just learning *about* history, but rather discovering it, more as historians. Such an understanding will help them not only to know more about a particular time in the past, but more importantly give them a broader perspective for understanding where they are today.



A gift to the nation from Bond Corporation.

Captain James Cook is recognised as one of the greatest navigators of all time. His voyage in *H.M.B. Endeavour* resolved many of the unknown aspects of the geography of the Pacific Ocean and lead directly to the European settlement of Australia.

In choosing to build an authentic replica of the *Endeavour* as its Bicentennial gift to Australia, Bond Corporation recognises the feats of Cook, his crew and their ship, a former Whitby collier.

The Endeavour replica will be given to the people of Australia through the auspices of the Australian Maritime National Museum and will be berthed in Sydney's Darling Harbour.

It is fitting that as part of its Endeavour Project, Bond Corporation is proud to sponsor the *Cook's Endeavour* educational software package as an additional and important adjunct to the ship building.

Cook's Endeavour will be distributed free of charge to all high schools in Australia. A separate primary school package is also being produced and will be distributed free of charge to all those schools.

We congratulate Softime Australia Pty Ltd for its professionalism in the production of this kit and we gratefully acknowledge the advice and assistance of the Departments of Education throughout Australia in making this valuable project possible.

We know you will find it educational and enjoyable.

ALAN BOND

Chairman
Bond Corporations Holdings LTD

What's in the Cook Resource Kit

As a resource kit, the *Cook's Endeavour* package is made up of a number of components...

- **Teacher Reference Notes**

These have been written to give teachers an understanding of the scope of the package, how it works, and how it can be used in the classroom. The final section deals with the assumptions made in the design of the package, and the implications these assumptions have for students using it.

- **Curriculum Activities**

A wide cross-section of ideas for integrating the focus of the Cook package across a range of curriculum areas.

- **Enrichment Ideas and Activities**

A collection of photocopyable sheets that can be completed by groups, or individual students as an extension of the basic research work they have completed.

- **Student Resource Sheets**

Activity sheets which can be photocopied for individual students to help plan their voyage and record their adventures as they happen.

MAPS

A4 sized pages to photocopy for each voyage (or voyager), to keep track of where they are and where they are going.

WELL.... THAT
CERTAINLY
HELPS A
BIT!

INFORMATION CARDS

Written for students to use. They are titled individually, and will cover most of the queries your class will come up with. They are A4 sized, so you can actually photocopy them and hand them to the student who asked that question.

ORDERS

One of the INFORMATION CARDS has a simplified version; there is also an exact copy in the sealed envelope so labelled. The students have to carry them out to the best of their ability; they are really the centre of the whole exercise.

IT WOULD HAVE SERVED
WELL IF I'D HAD ALL OF THAT
INFORMATION WHEN I DID
IT, I CAN TELL YOU!



CREW LIST

Information about the crew, including 30 in depth personal profiles for either role-playing, or individual background generally.



Cook's Endeavour TEACHER REFERENCE

- What the Kit has to Offer
 - Content Goals
 - Learning Objectives
- Overview
 - How the Cook Resource Kit works
 - A Sample Outline of Lessons
- Learning to use the Software
 - Registering a Crew
 - Seamanship & Ship Rating
 - The Port Screen
 - Setting a Course
 - The Sailing Screen
 - Port Information
 - Supply Levels
 - Checking the state of the Ship
 - Repairing the Ship
 - Checking the state of the Crew
 - Getting more Crew
 - Program Options
 - Events
 - Saving a Voyage
 - Quitting
 - The Certificate

What the Kit has to Offer

Content Goals

Cook's Endeavour offers teachers the opportunity to pursue a number of broadly-based goals, looking at several key issues ...

- the role played by Cook as captain and navigator in the settlement of Australia.
- the challenges and issues faced by explorers in the 1700's.
- the political and economic conditions around the world at the time of Cook's voyage.

Learning Objectives

Cook's Endeavour will help students ...

- undertake a series of activities that enable them to consider the voyages of Captain James Cook from a different perspective.
- participate in a series of collective and individual decision-making processes.
- discuss critical issues relating to the early exploration of Australia's coastline.
- develop a better understanding of the conditions for sea explorers, and others living in England in the 1700's.
- consider alternative answers to problems and pay attention to detail in note-taking.
- hypothesise and predict, and examine the results of such actions ... developing a 'what-if' approach to early explorations.
- to recount in some detail the sequence of events which collectively made up the first voyage of Captain James Cook and his crew to Australia.
- simulate navigation using compass bearings.
- develop strategies for solving problems of survival relating specifically to the maintenance of adequate supplies.

Overview

How the Cook Resource Kit works

Cook's Endeavour can be used as a simulation of James Cook's voyage to observe the transit of Venus and search for the great southern land. To achieve these goals, your students will need to find a ship in suitable condition and equip it with supplies and a crew. Since they are on a trip sponsored by the Royal Navy, Joseph Banks and the Royal Society, there are some crew they are forced to take along (i.e. Banks and his party and the marines). There are, however, advantages in being a naval voyage sponsored by King George III in that they can use naval requisitions at any friendly port to get supplies and repairs with no need to carry currency or bullion.

Having established that the ship has enough crew and is fully equipped, your students set off on the voyage of discovery (keeping in mind that Cook didn't discover Australia, rather he located and mapped the east coast). Some supplies may last a week, some two months, and some two years (hard tack with weevils can become quite a tasty meal!). Water is likely to be the main problem as it only lasts approximately ninety days before it goes off. It is therefore obvious that it is necessary to stop at ports on the way ... as the trip could total up to three years or even longer.

The students' voyages will need to be carefully planned from port to port so that ship, crew and supplies all remain in relatively good condition. Also, they should be aware of the prevailing winds and currents that are likely to blow them off course. Can they survive a storm that blows them a hundred kilometres off course? They must keep their map close by so that they can always tell where they are and where they can go for sanctuary.

The Royal Navy will want a report if and when they return, so they should keep track of important events and places they visit. The Navy will also want to know what supplies the students obtained, and where they got them so they can plan further voyages.

Throughout the voyage, the students will need to make decisions about the direction to sail in, how to handle the crew when they get a bit rowdy or unsettled, what to do when a storm hits, and also keep a close eye on supplies.

As the teacher, you have the power of 'life and death' over each voyage. Through the 'Teacher options' section, you can set certain conditions before a voyage begins and you can also alter details of a voyage once it has begun.

To make it easy for you, *Cook's Endeavour* is set up with defaults, so that if you want to leap straight into the package, it will automatically select the option for a

A Sample Outline of Lessons

simulation of Cook's voyage and the *Endeavour* will be equipped ready to sail. This means the *Endeavour* is equipped as we believe it was prior to leaving England on its epic voyage.

A new crew of students can now start the simulation and head out to sea without having to go through the detailed procedure of obtaining supplies and crew. We have done this to give both teachers and students a chance to get to know the package ... it could be taken as the time to 'gain experience at sea' before venturing out on your own voyage. It is still essential though, that anyone using the package has at least a background knowledge of the conditions of the times, which can easily be gained by reviewing Information Cards 1 to 8.

This is not an unreal expectation, given that one would normally expect any explorer of the times to want to find out everything possible about the conditions he or she might encounter on a voyage.

The following is an outline of lessons which a class might follow over a period of 4-6 weeks. It is designed for groups of four to six students working with one computer.

Lesson One

A broad introduction to the topic; discussion of what students see as the problems that may be encountered. Presentation of major issues to be investigated and the resources that are available.

Lessons Two to Four

In groups or individually, students research information contained on Information Cards 1 to 8 and supplementary material. Students could use the information to begin their own log or diary, present the results of their research to other groups, or even complete activity sheets or cards based on what they have discovered so far.

Lesson Five

Preparation for the voyage. Review of available supplies, stocking up each crew's ship (approx. 10 minutes per crew at the computer) and charting the intended route to be taken.

Lessons Six to Nine

Each crew sets off on their voyage, in turn, changing over as they reach their next major port. Presuming that the groups will come to the computer well-prepared, they would probably spend between ten and twenty minutes at each turn. This should give each group a chance to continue on a section of their voyage during each lesson.

The time taken to complete a voyage will vary enormously, depending on the route each crew takes, how successful they are at staying afloat and well-fed, how good they are as navigators and how competent they become at sailing via the simulation.

The time taken at the computer can be supplemented by a lot of research and reading, which would be either following-up on information they have gained from their previous turn or preparing for the next part of their voyage.

Lesson Ten

Review of all voyages, discoveries and reports. Detailed discussion of the major issues raised through the activities.

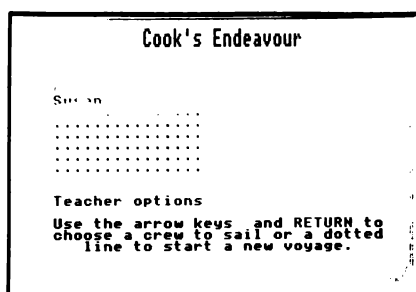
The outline above could obviously be varied to allow for more whole class work, more computers per student, or totally individual work. Thus, in the extreme, the work could be completed in as little as four or five lessons, or could occupy a term.

The student who tackles *Cook's Endeavour* as he or she would a video game may be very disappointed, as it is clearly not designed in that format. The objective is **not** just to see how quickly you can sail to Australia and back, but rather to better understand the conditions under which exploration took place 200 years ago.

In keeping with the design philosophy of this package, the students would normally spend only a limited, though critical, time at the computer. In the outline above, the computer isn't even introduced until the fifth lesson and the students would probably only spend 15-25% of their time actually using the computer.

Learning to use the Software

Registering a Crew



This chapter is a guide to getting started with the software. Although it's possible to start the voyage in other places, it is assumed here that you will start your voyage, as Captain James Cook did, in Plymouth. Before you start, you should have some plan about where you want to go. Study the map and decide what port you think you should aim for on the first leg of the voyage.

You should also make a working copy of this disc and put the original in a safe place. It's possible to change the software considerably using the 'Teacher options' section. Provided you've always got the original disc somewhere safe, it does not matter if you make any changes to your work disc. See the manuals that came with your computer for details of how to make a backup disc. Once you've done all this, you're ready to begin.

The description that follows is written specifically for the BBC Microcomputer. If you have an Apple or an IBM-PC, refer to the separate insert for your computer as well.

First, you register your crew. Put the disc in the disc drive and, while you hold down the **SHIFT** key with one finger, tap the **BREAK** key with another. The title screen appears. (N.B. If you press the **SPACE** bar as this screen is being loaded, you can move straight to the credit screen and bypass the music.) You can now view the credit graphic or press the **SPACE** bar again to move straight to the next screen.

To see the background information, enter **Y** and press **RETURN**. Press **SPACE** to move from one screen to the next. If you don't want to see it, enter **N** here.

A list containing the crews currently stored on the disc appears. Sometimes, a group of demonstration crews might also appear. This will only be present if the teacher has selected them previously.

To register a new crew:

- Use the **arrow** keys to highlight one of the dotted lines. (It is highlighted when it changes colour.)
- Then, press **RETURN**.
- Enter the crew name (up to 15 characters) and press **RETURN**.

If there is no room for any more crews on the disc, you will have to use the 'Teacher options' section to delete some of the ones that are no longer necessary.

If you are continuing a voyage, use the **arrow** keys to highlight the name of your crew and press **RETURN** to select it.

Seamanship & Ship Rating

Once you enter the crew name, you take over your ship. Throughout the voyage you will be faced with a number of decisions. You will have to make decisions about:

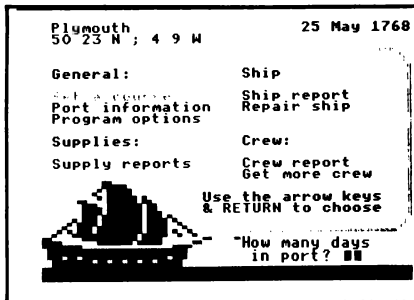
- **Navigation** With the map as a reference, you must decide in what direction you want to travel and what ports you want to enter.
- **Supplies** You must maintain adequate supplies of food, water and other essential requirements during the voyage.
- **Crew levels** You must ensure that your crew remains healthy and that you have sufficient sailors to manage the ship properly.
- **Ship condition** You must make sure your ship remains in good shape and, if it does suffer damage, find a way to repair it as soon as possible.
- **Events** During your voyage you will encounter many events. Some of these take the form of quite complex activities which most voyagers will encounter. Others are quite unpredictable. You must be able to decide how to deal with each of these events.

Each decision you make reflects on your seamanship and the state of your ship. These factors determine how successful you are. When you begin the simulation, you have the rank of lieutenant. At the end of the simulation, depending on your degree of success, you may be promoted to a commander (as Cook was), or even a captain, or demoted.

Your level of seamanship is affected by decisions relating to things such as navigation, crew morale, successful replenishment of supplies and completion of the required tasks. It is also directly related to the state of repair of the *Endeavour*. Should the ship deteriorate too much, your voyage will end ingloriously.

You'll find a more detailed description of how the level of seamanship and the state of the ship are calculated in the 'Teacher options' section of this guide. Be aware though that it is not necessary for students to know about the rating system. They just need to understand that the decisions they make will influence whether or not they are promoted or demoted at the end of the voyage.

The Port Screen



There are two major screens in *Cook's Endeavour*. The Port Screen appears whenever you are in port or make landfall and the Sailing Screen appears when you are at sea.

When you enter your crew name, the Port Screen is displayed. It shows the name of your current port, its latitude and longitude and the date. When you begin, you are at Plymouth and the date is 25th May 1768.

Below that is a series of options. These options allow you to find out information about your current status and to make decisions based on that information.

You can find out:

- Your current supply levels, by choosing *Supply reports*.
- Information about any of the ports you might want to visit, by choosing *Port information*.
- The state of the ship, by choosing *Ship report*.
- How many crewmen you have and in what condition they are in, by choosing *Crew report*.

You can decide:

- What course you want to sail and for how long, by choosing *Set a course*.
- What supplies you want to take on, by choosing *Supply reports*.
- To take on more crew, by choosing *Get more crew*.
- To make repairs to your ship, by choosing *Repair Ship*.
- To change any of the program options. (These are explained below.)

You can select any one of these options by highlighting it using the **arrow** keys and then pressing **RETURN**.

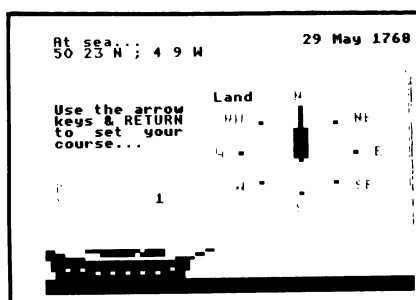
However, you will always be working to a tight schedule. The date at the top of the screen starts to tick over immediately. After a day in port, you will be asked how many more days you would like to stay for. When the message

How many days in port?

appears, you **MUST** enter the **number** of days you want to stay and then press **RETURN**. The days then begin to pass and you are now able to use the **arrow** keys again to choose any of the options.

Once you 'Set a course', you immediately leave port, no matter how many more days you have set aside. So, don't choose this option until you are ready to set sail.

Setting a Course



Normally, when you begin the voyage at Plymouth, the ship is fully supplied and in good condition, and you have 94 crew. So, you can set course immediately.

If you want to make the simulation more challenging for students, you can vary the level of supplies and the number of crew that are available when the voyage begins. Students would then have to stock up and collect crew before beginning their voyage. See 'Teacher options' in this guide for more details.

You should use the map of the world provided to help you plan your voyage carefully before you set out and accurately record your progress.

When you are ready to set sail, choose 'Set a course' by highlighting it and pressing **RETURN**.

The screen shown here is displayed. Your current latitude and longitude and the date still appear together with a description of where you are. When you leave Plymouth, this description is 'At sea'.

You must now choose a course and then indicate how many days you want to sail on that course. The instructions for how to do that are immediately below.

When you have chosen your course, press **RETURN**. The Sailing Screen appears.

Choosing the Course

Use the **→** arrow key to move the compass dial in a clockwise direction and the **←** arrow key to move it anti-clockwise until it is on the bearing you want to travel. As you move from one position to the next, a description of what is in that direction appears. This will be one of:

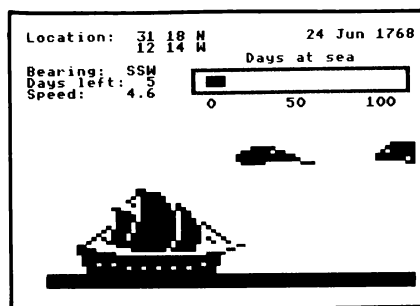
- land
- coast
- port
- sea

'Coast' is small outcrops of rocks through which you can continue to sail. 'Land' describes the mainland of a continent or islands at which you can land.

Entering the Number of Days

Use the **↓** or **↑** arrow keys to choose the number of days you want to sail on the current bearing. To speed up this procedure, hold down the **SHIFT** key at the same time as you press the arrow key. You can then jump ten days at a time.

The Sailing Screen



Once you set a course, the Sailing Screen appears. Here, you can monitor your progress. You can see your current latitude and longitude, the date, your current bearing, how many days you have left on this course, your sailing speed in knots, and how long you have been at sea.

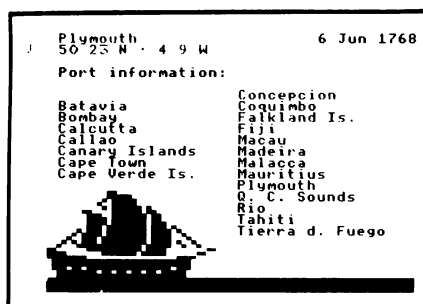
In addition, you will receive a commentary of any incidents that arise. You might find, for example, that some of your supplies have gone off. If any message appears, read it and then press **SPACE**. You should keep a log of all such events that occur on your voyage.

While you are sailing, you can also use the function keys to do any of the following:

- f0 Check your current supplies or issue special rations.
- f1 Obtain a ship report.
- f2 Obtain a crew report.
- f3 Obtain information about all the ports.
- f4 Change any of the program options.
- f5 Set a new course.
- f8 Save your voyage.
- f9 Quit.

These function key commands work whenever the ship is sailing. They are shown on the function key strip.

Port Information



In preparing for each leg of the voyage, you will need information about other ports around the world that you can call into for supplies.

If you are in port, choose the 'Port information' option. If you are at sea, press the f3 'Port info' function key.

When you choose 'Port information', the screen shown here appears. Use the **arrow** keys to choose the port you want to know about. Then, press **RETURN**.

This information includes the port's latitude and longitude, and a description of the facilities available. There is also a list of the nearest ports and the approximate number of sailing days required to reach each of them. This is only a guide — many unexpected things can happen to you on the way or you may not choose the best possible sailing route.

When you've finished reading about the port, press **SPACE** to return to the list.

You can then choose another port or press **ESCAPE** to return to the previous screen.

Supply Levels

At Sea... 12 Jul 1768
0 27 N ; 25 16 W

Supply item	Curr	Rec	Rat	Dec
Salted beef	1880	4700	1	369
Cheese	3760	4700	1	49
Fish	0	4700	2	0
Fruit/veg.	0	4700	2	0
Game	4324	4700	2	29
Hard tack	4324	4700	2	869
Fresh meat	3290	4700	2	9

Use the arrow keys and RETURN to pick an item for special rations.



Plymouth 25 May 1768
50 23 N ; 4 9 W

Supply item	Curr	Rec	Rat	Dec
Salted beef	4700	4700	1	400
Cheese	4700	4700	2	80
Fish	4700	4700	2	3
Fruit/veg.	4700	4700	2	30
Game	4700	4700	2	60
Hard tack	4700	4700	2	900
Fresh meat	4700	4700	2	40

Use the arrow keys to choose & 0-9 to enter a new value.



You should check your supply levels regularly. When you are at sea, press the f0 'Supplies' function key. When you are in port, choose the 'Supply reports' option.

If supply levels are **high**, you should be able to keep crew morale high. Remember though, you are limited by your 'weakest link', water, which can usually only stay fresh for up to three months. If supply levels are **low**, you may need to reduce rations immediately and you will need to call into a port and buy more supplies.

When you are at sea, as well as checking your supply levels, you can change the daily ration for an item or, if you have sufficient supplies, you can issue special rations. See below for details.

When you are in port, as well as checking your current supply levels, you can take on new supplies. See below for details.

When you ask for a supply report, one of the screens shown here appears.

Use the ↓ or ↑ arrow key to scroll through the list of items. For each one, you can see:

- The name of the item.
- The current supply level.
- The recommended supply level.
- The number of days between the issue of the ration.
- The number of days before the item decays.

Food supplies, or rations, are measured in 'units'. One unit of each item is taken as equal to the amount a single crew member would require for one day.

Press **ESCAPE** when you have finished checking your supply levels, changing the daily ration, issuing special rations or taking on new supplies. You are returned to the previous screen.

Changing the Daily Ration

Use the the ↑ or ↓ arrow key to scroll through the list of supply items until you find the one you want to change. If the cursor is in the 'Curr' column, press the → arrow key to move across to the 'Rat' column.

This value is the number of days between which one serving of the supply per crew member will be dispensed. For example, the value '5', represents one serve every five days. So, if you had 100 crew on board, after 10 days you would have used 200 units of the item.

Enter the new value and press **RETURN**.

At sea 12 Jul 1769
0° 27' N 125° 16' W

Supply item	Curr	Rec	Rat	Dec
Salted beef	1880	4700	1	369
Cheese	3760	4700	3	49
Fish	0	4700	2	0
Fruit/veg.	0	4700	2	0
Game	4324	4700	1	29
Hard tack	4324	4700	1	869
Fresh meat	3290	4700	2	9

How much do you want to issue? ■■

Issuing Special Rations at Sea

If you choose the Supplies Screen while you are sailing, you can issue special rations. This is a one-off event which does not alter the normal level of daily rations.

Use the the ↑ or ↓ arrow key to scroll through the list of items until you find the one you want to issue. Press RETURN. The message 'How much do you want to issue?' appears.

Enter the number of servings per crew member and press RETURN. For example, if you have 100 crewmen and you issue a special ration of 1, you will use up 100 units of the item. When you press RETURN the 'Curr' (Current) column will be adjusted.

Taking on New Supplies in Port

Use the the ↑ or ↓ arrow key to scroll through the list of items until you find the first supply item you want to take on board. Make sure the cursor is in the 'Curr' column. Enter the new total number of units you want on board and press RETURN.

If the port can supply the number of units you want, the 'Curr' column will be updated with the number you entered. If the port can only supply part of your request, you will receive a message such as 'The port can only supply 500 units'. Press SPACE and the 'Curr' column will be updated with the maximum possible supplies. Sometimes, the item you request may not be available at all. You will receive a message such as 'I'm sorry but the port can't supply any more of that'. Press SPACE and the 'Curr' column will return to the original value.

Checking the state of the Ship

At sea 22 Feb 1769
12° 47' S 99° 55' E

0% hull
0% masts
0% rigging
0% sails
0% food
0% water
0% medicine
0% tools

Would you like to see the Bosun's report? ■■

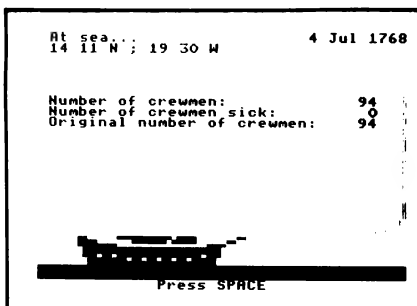
It is important that you always know what state the *Endeavour* is in. As you are sailing, it will gradually become less seaworthy and if you let it get too run down it might even sink and you will never return. If the *Endeavour* suffers any damage, you may be able to repair it when you reach a port. Not all ports have proper facilities to repair ships though.

To check the state of the *Endeavour* while you are at sea, press the f1 'Ship report' function key. When you are in port, choose the 'Ship report' option.

The screen shown here appears. It contains a report which indicates whether or not the ship needs repairing and the message 'Would you like to see the bosun's report?' The bosun's report covers more detailed

Repairing the Ship

Checking the state of the Crew



information about the ship's equipment, for example the anchor, the tiller or the forestay.

Enter **Y** and press **RETURN** to see the bosun's report. Press **SPACE** when you've finished reading it and you are returned to your previous screen. Enter **N** if you don't want to see the bosun's report.

Note that there is no bosun's report if the ship is in good condition.

If you find that the ship needs repairing, you should try to head for a nearby port where there might be repair facilities available. You can only carry out repairs in ports which have appropriate facilities. You may have to do some research to find out what ports were well-equipped to repair ships such as the *Endeavour*.

When you arrive in port, enter the number of days you want to stay. You'll need to take account of the number of days you think you will need to repair the *Endeavour*. Once you've decided how long you want to stay, choose the 'Repair ship' option.

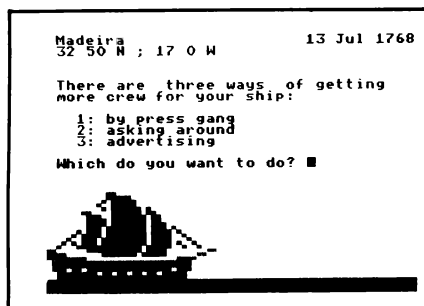
A message such as 'Ship repairs underway' appears and you are then returned to the Port Screen. The repairs have now begun but you will need to stay in port for some days before any can be completed. Before you set your new course, you can check to see that the ship has been fully repaired by choosing 'Ship report'.

You should always be aware of your crew's state of health and their morale. If too many crewmen become ill or die or if the crew's morale becomes low, you might have serious problems and you certainly will be considered a less competent captain.

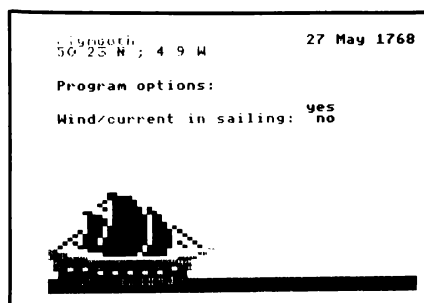
You can check the state of your crew while you are at sea or in port. If you are at sea, press the **f2** 'Crew report' function key. If you are in port, choose the 'Crew report' option.

The screen shows the number of crewmen, the number of crew who are sick, and the original number of crew. The latter allows you to work out how many crew members have died. When you have finished, press **SPACE** and you are returned to your previous screen.

Getting more Crew



Program Options



Events

If too many crewmen have died, you may have to get more. You can only get more crew when you are in port.

Once you reach the port, choose the 'Get more crew' option. You can get more crew by press ganging them, asking around or advertising. The number you manage to get depends solely on the method you use. Press ganging yields the most crew and advertising yields the least. The number of crew available varies depending on the port you are in.

Enter the **number** corresponding to the option you want and press **RETURN**. You will be told how many you managed to get. Press **SPACE** and you are returned to the Port Screen.

In addition to all the decisions you can make that affect the progress of your voyage, there are two program options which you can change.

You can indicate whether or not you want to be reminded when your supplies are running low. The supply reminders are messages such as 'The quartermaster reports that the tropical fruit have gone off'. This option is normally set to 'yes'.

You can indicate whether or not you want the currents and winds to affect your progress. This option is normally set to 'no'.

You can change either of these program options if you are in port or at sea. In port, choose 'Program options' from the Port Screen. At sea, press the **f4** 'Options' function key. The screen shown here appears.

Use the **↓** or **↑** arrow key to highlight the option you want to change. Then, use the **←** or **→** arrow key to change from 'yes' to 'no' or vice versa.

Any changes you make are saved with your game.

At regular and irregular times throughout your voyage, you will encounter events of varying significance to your travels.

Commentary events provide a background commentary of events of minor significance during the voyage. These events do not directly influence the outcome of the voyage but they may have a strong indirect influence.

e.g. *The Quartermaster reports that the tropical fruit has gone off*

Major events directly influence the outcome of the voyage and, in particular, require the captain to make a decision. They are usually presented in the form of a commentary item, with multiple choice answers following.

e.g. *A boat has been sighted drifting. Do you want to:*

1. *continue on your way*
2. *change course and investigate*
3. *drop anchor and send out a long boat?*

To make your decision, enter the **number** matching your choice and press **RETURN**.

Warning events are messages which give some indication that there is a problem. They occur when the crew's energy level, morale, water or scurvy level is dangerously low.

e.g. *The men are complaining of sore gums.*

Activities have been built-in at certain points in the simulation. These activities have been designed to give students a better feel for some of the situations and problems Cook encountered during the actual voyage of the *Endeavour*. Although students can ignore some of them, they will be considered poor commanders if they do. There are six of these major activities and they are described in the next section.

Note that it is possible to set up the Cook voyage disc so that students can gain immediate access to these activities without having to register as a crew. The procedure for hiding and showing these 'Demo' crews is explained in the 'Teacher Options' section.

Saving a Voyage

Most students will take many sessions at the computer to complete a voyage. For this reason, they need to save their voyages at the end of each session so that they can continue where they left off when they return to the computer.

However, it only takes a few seconds to save a voyage so you should encourage students to do it often during a session at the computer. This way, even if the power is disconnected for some reason or someone accidentally presses the BREAK key, they will always be able to return to a point near their current position in the game.

To save a voyage, press the f8 'Save' function key. The current game is saved and the message 'Crew saved.' is displayed. When you are ready, press **SPACE** to return to the simulation.

You should also regularly make a backup copy of your work disc that has all the students' voyages stored on it. Then, if the disc is damaged, you will have a recent copy of each crew's progress.

The procedure for making backup discs should be outlined in the manuals that come with your computer.

Quitting

Once you have saved your voyage (see above), you can quit a session at the computer. If you choose to quit without saving, you will have to begin your voyage again the next time you want to sail with the same crew.

To quit, press the **F9** 'Quit' function key. The message 'Do you want to finish? Y/N' appears. To finish, enter **Y** and press **RETURN**. You can then remove the disc safely.

The Certificate

Your aim as captain of the *Endeavour* is to carry out your orders and then return to England. At the completion of the voyage, you will be presented with a report. The report will tell you how successful you were commanding the *Endeavour* and whether you have been promoted or demoted.

You will be asked if you want a certificate. If you have a printer connected, you can obtain one.

Make sure your printer is turned on and on-line. Then, enter **Y** and press **RETURN** when the message 'Do you want a certificate?' is displayed.

Your certificate is printed. When the printing is complete, the message 'That completes your sailing for now.' appears. You can now safely remove the disc and turn off the computer.

Note that you are only asked if you want a certificate if you manage to complete the voyage. If the *Endeavour* sinks, you will only receive a screen report explaining your inglorious end.



Cook's Endeavour
THE ACTIVITIES

- Introduction
- The Longitude Puzzle
- The Rio Adventure
- The Transit of Venus
- Anchoring at Botany Bay
- The Great Barrier Reef Maze
- In Batavia

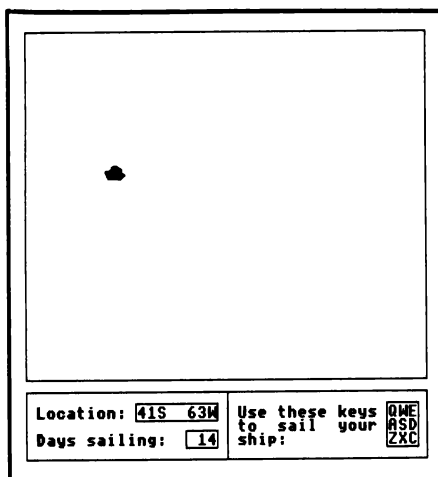
Introduction

During the voyage, there are several activities which must be completed before proceeding. They are:

- The longitude puzzle south of Cape Verde.
- An adventure in Rio de Janeiro.
- An observation of the transit of Venus.
- Anchoring safely in Botany Bay.
- Finding your way through the Great Barrier Reef.
- Repairing the ship in Batavia.

However, if you want to use any of these activities directly, you can use the 'Teacher options' to make them 'Demo crews'. Each one then appears on the list of crews and students can then select the one they want in the normal way. Refer to p. 42. for a description of how to make these 'Demo crews' appear.

The Longitude Puzzle



This activity helps convey the importance of the calculation of longitude and gives you an opportunity to develop problem-solving skills which will allow effective navigation without an accurate measurement of longitude.

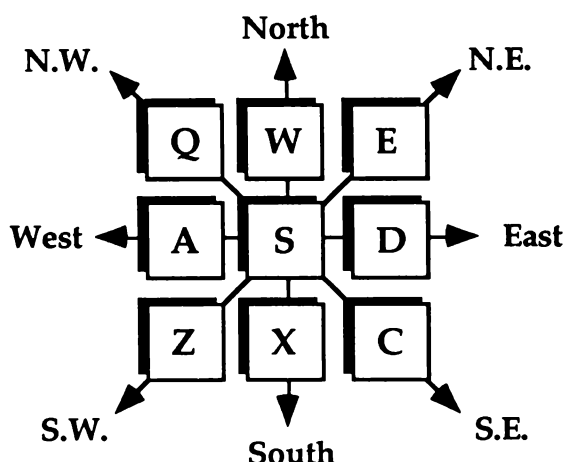
Travelling south from Cape Verde, you encounter this activity when you enter the area outlined by longitudes 15° and 35° W, and latitudes 0° and 15° N.

A member of Cook's crew asks what course of action he would have taken had he been navigator of the ill-fated *Centurion* in 1741. Cook asks the crew to imagine that they have some seriously ill sailors on board. There is an island where they could be treated. It has a latitude of 35° S and longitude of 85° W. They can measure the latitude confidently but, because it is so time-consuming and difficult, can only measure the longitude every three days. The measurements are only accurate within + or -5 degrees. Refer to Information Card 18 for more details.

The screen shown here appears. The ship is in the bottom corner of the area of the screen representing the sea. Your current known location (in latitude and longitude) and the number of days you have been sailing appears at the bottom of the screen.

The Rio Adventure

You can sail the ship by any of the eight key points of the compass. The keys you can use and the bearing each one represents are shown below:



Press the S key to Heave-to.

Each key press equals about half a day's sailing. The longitude calculation only changes after three days sailing.

When you have located the island, you receive a message indicating how successful you were. Success depends on how many days it takes to get there. If you take too long, you will lose some seamanship points.

When you finish, you will be at the same position you were when you entered the activity.

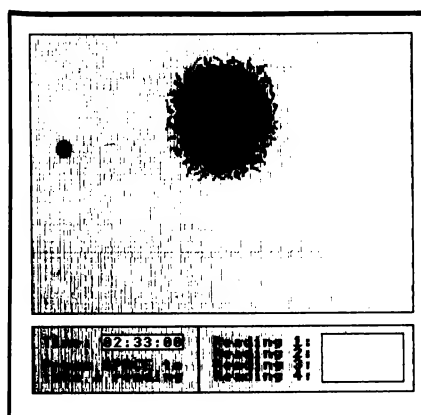
This activity aims to confront you with similar circumstances to those faced by Cook and to present you with the sorts of decisions he had to make at Rio. It will also increase your awareness of the importance of looking after the *Endeavour* and the need for patience and diplomacy in the face of difficult circumstances.

When you enter Rio, you find yourself in a critical situation. You need to repair the ship and stock up on supplies but the Viceroy is suspicious of your intentions and makes it difficult for you. You must be patient and tactful. If you become impatient and try to storm the colony, your seamanship rating will be penalised.

Each screen either contains a description, after which you press **SPACE** to continue, or requires you to make a decision. You make a choice by entering the **number** matching the option you want and pressing **RETURN**.

There are several possible end points. Depending on the decisions you make, you will eventually either leave Rio with the Viceroy's blessing, 'sneak' away under a cloud, or your ship will be impounded. Your seamanship rating

The Transit of Venus



will be progressively adjusted according to the wisdom of your decision-making during the adventure.

This activity reinforces the importance of the observation of Venus as a major part of the voyage and simulates the conditions under which it took place.

When the *Endeavour* passes within three days of Tahiti, you are asked if you want to anchor.

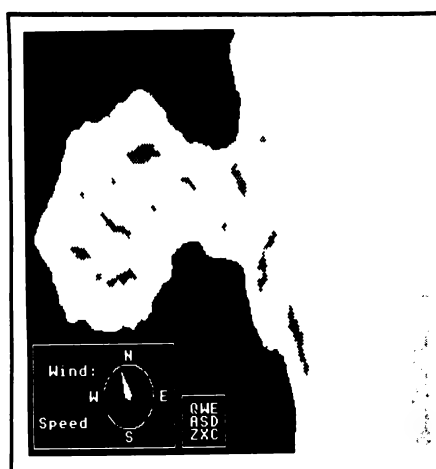
If you say no, you don't take part in the activity but, because it was a requirement of the original voyage, you will be heavily penalised.

If you decide to make the observation, you have to take four readings. This involves noting four times during which Venus is making its transit across the Sun's surface. To take each reading, press the SPACE bar. The time of the reading will be noted in the log.

Your timing of the transit must be precise and accurate. You should refer to Information Card 6 so you can work out the optimum time to take each reading.

You then receive a message indicating how successful you were, and depending on your % accuracy, gain or lose ship rating and seamanship points.

Anchoring at Botany Bay



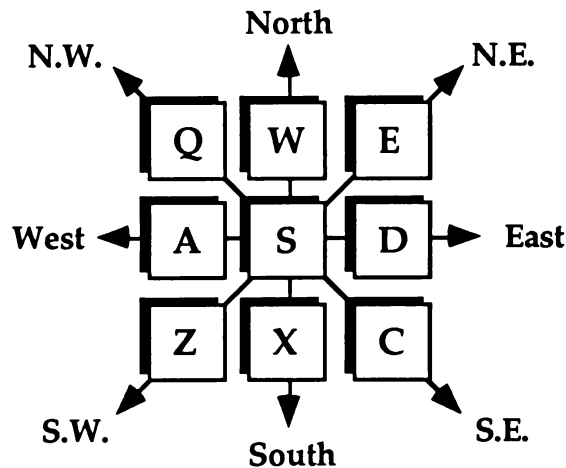
The objective of this activity is to give you a feel for sailing a ship such as the *Endeavour* into a small bay area and to give you a chance to gain an understanding of the circumstances that need to be taken into account when sailing in a confined area.

After some introductory information, you are asked 'Would you like a bird's eye view of the bay?'. Answer Y and press RETURN if you want to be able to see the outline of the bay and major outcrops of rock when you begin. Answer N if you want the more difficult option — where the land only becomes visible as you approach it. The latter is the more realistic simulation.

You must navigate the *Endeavour* into a safe anchorage. There are four safe areas where you could anchor. You must work out what they are and then try to sail the ship into one of them.

In the simulation, the ship's movement is directly related to the wind direction. If, for example, you try to sail directly into the wind you will move backwards. Otherwise, providing you don't sail less than 67 1/2° to the wind, you will advance in the appropriate direction.

You control the ship's direction using the same keys as in the longitude activity. They are shown again here:



Remember, press the S key to heave-to.

To alter the speed, press the appropriate number key (1, 2, 3 or 4). The values represent the following sail settings:

SETTING	KEY PRESS
1 sail set	1
4 sails set	2
12 sails set	3
16 sails set (full rig)	4

The wind direction is shown on the compass. It changes regularly and you may be able to pick a trend. Don't forget that if the wind direction is currently not favourable, you can heave-to by pressing the S key and wait until you get better conditions before proceeding.

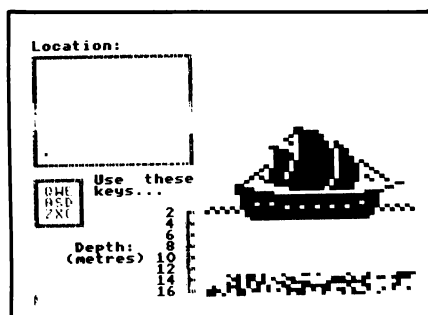
There are also a number of submerged objects which you may or may not be able to see. Provided you are sailing at a safe speed (1 or 2), these objects will become visible as you approach them. If you are travelling too quickly, you will not see them and so will increase the risk of running aground.

Your seamanship and the ship rating are affected by how competently you sail the ship. Factors such as whether you hit any submerged objects and the speed you are travelling at are important.

When the ship has been safely anchored, you receive a ship report detailing the number of days lost due to damage, a seamanship rating based on your ability to safely anchor the ship and a description of the harbour.

Once you have completed the activity, the program moves to the Great Barrier Reef maze.

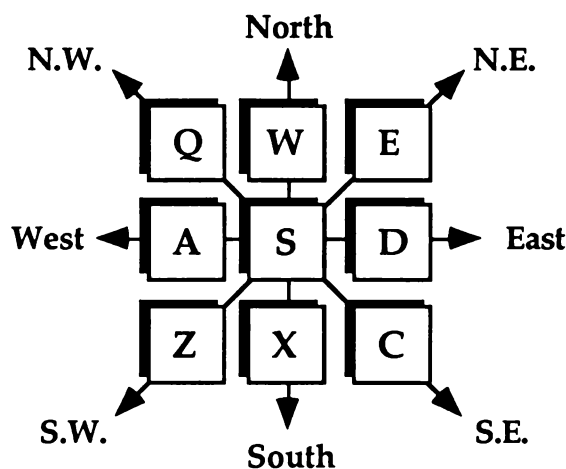
The Great Barrier Reef Maze



The objective of this activity is to simulate the progress of the *Endeavour* through the Great Barrier Reef and help you better understand the difficulty in negotiating a maze such as the Great Barrier Reef in a sailing ship by 'heaving the lead'.

As you move further to the north up the east coast, you begin to approach rugged outcrops. These gradually become more dangerous and so the leadsman begins to take soundings and call them out.

You must try to find your way through this maze of coral. If the depth of the water falls below 4.5 metres the *Endeavour* will be holed. You have control over the direction of the ship using the same keys as in the longitude and Botany Bay activities:



Finding a safe path through the maze is not an easy task and few of you will complete it without holing the ship. Watch out for gradual changes in depth and get ready to change direction quickly. If you do get through, you receive a healthy bonus to the seamanship and ship ratings.

If you hit the reef, you have to decide what to do. As in the Rio adventure, you select any option by entering its corresponding **number** and pressing **RETURN**.

Several consequences are possible. The ship might sink, you might be left on the coast of this unknown land forever or you might be able to get off the reef and then repair the ship successfully.

If you don't repair the ship your adventure ends here. If you do manage to repair it, you can go on to Batavia.

In Batavia

The purpose of this activity is to help you understand the difficulties Cook faced in trying to maintain his crew's health, and yet get the *Endeavour* home.

The ship is in need of repair but there is fever in Batavia which immediately affects the crew.

After an inspection of the ship, Hicks provides a report detailing what repair work needs to be done and how long each job will take.

The activity becomes a balancing act. The longer the *Endeavour* remains, the more crewmen become ill and die. But, there is no point in risking everyone's life by leaving before the ship is in a fit state to sail. Otherwise, nobody will make it home.

If you decide to leave too early, the ship will sink. However, the longer the *Endeavour* remains at Batavia, the more crew members will die.

This activity requires you to respond by making choices in the same way as the Rio adventure. In addition, you need to constantly check the state of the crew and the state of the ship so that you can decide at what point you should take the risk and try to set sail.

At each stage in this activity, you either receive a description, after which you must press **SPACE**, or are presented with a list of possible decisions. Make your choice by entering the **number** matching what you have decided and then pressing **RETURN**.

To help you reach each decision, you can ask for a ship report by pressing **f1** or a crew report by pressing **f2**. The information you discover from both of these sources should help you work out when is the best time to attempt to leave Batavia.

During the time you are repairing the ship, you will receive messages such as 'A crewman has fallen ill' or '2 men have died'. After such a message appears, press **SPACE** to continue.

If you manage to judge the best time to leave Batavia, the *Endeavour* will have a safe return journey to England.



Cook's Endeavour TEACHER OPTIONS

- Software Options
 - How the Crews are set up
 - Selecting the Teacher Options
 - Altering a Crew
 - Deleting a Crew
 - Altering Details of a Supply Item
 - Printing Crew, Supply or Port Details
 - Showing or Hiding the Demo Crews
- Different Ways to Use the Package with your Students
 - In Groups with 1 or 2 Computers
 - With the Whole Class
- Before they Sail
 - Preparing Students for their Voyage
 - A Suggested First Lesson
- Design Assumptions
 - The Map
 - Units for Supplies
 - Events on the Voyage
 - Finding a Port
 - The Rating System

Software Options

As the teacher, you have control over many of the variables in the simulation through the 'Teacher Options' section. You can access the teacher options from the screen which contains the list of crew names. You may, however, choose to overlook this section whilst you and your class are getting started.

Some of these options allow you to make major changes to the way all future voyages will begin. For this reason, you should always work with a copy of the master disc, not the original disc supplied with the package. Then, if you inadvertently make any dramatic changes and cannot restore things to their proper state, you can simply make another copy of your master disc and start again. Check the guide supplied with your computer for details of how to make a copy of the disc.

How the Crews are set up

Each disc is originally set up with one master crew, the 'Cook master' crew. Each time a new crew registers, it is given the same starting conditions as this master crew. However, you can modify this crew, thus changing the conditions under which each subsequent crew begins a voyage.

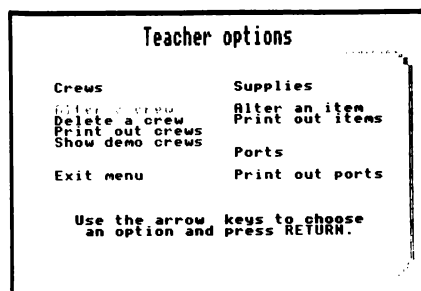
This format gives you complete flexibility. Students can easily get started using the version of the 'Cook' crew supplied with the package without you having to become familiar with any of the teacher options.

However, once your 'sailors' have developed confidence, you may wish to change aspects of the Cook crew to increase the challenge. You can, for example, reduce the supply levels or alter the number of crew. Students would then have to spend time at Plymouth planning what they need to take and stocking up — which, of course, Cook had to do.

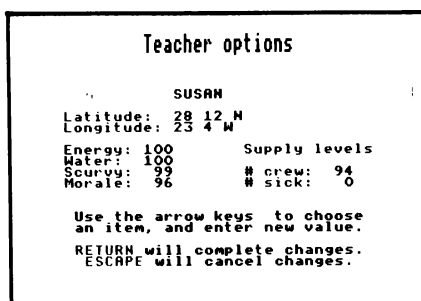
You can alter the Cook crew by selecting the 'Alter a crew' option and choosing the 'Cook master' crew. You can also choose 'Alter an item' from the 'Teacher options' menu if you want to modify the characteristics of any particular supply item.

Remember, though, any changes you make to the Cook crew will affect all subsequent crews created on this disc.

Selecting the Teacher Options



Altering a Crew



Start up *Cook's Endeavour* in the normal way. When you get to the point where the names of the crews are displayed, use the ↑ or ↓ arrow key to highlight 'Teacher options' and then press RETURN. (Note that the ↑ arrow key is an easy way to move to 'Teacher options'.)

Enter the password, which is Whitby, and press RETURN.

The screen shown here appears. You can now:

- Alter details of a crew, including the Cook crew.
- Delete a crew.
- Alter details of any supply item.

In addition, you can print out:

- Crew information.
- Supply information.
- Port information.

To select any option, you highlight it using the arrow keys and then press RETURN to select it. Remember, use the → and ← arrow keys to move between the columns.

To select 'Alter a crew', highlight it with the arrow keys and then press RETURN. The screen listing all the crew names appears. Choose the crew you want to alter and then press RETURN.

You can alter the following:

- The name of the crew.
- The ship's position (latitude and longitude).
- The energy, water, scurvy and water rating of the crew (see pp. 39-40 for the meaning of each of these)
- The number of crew members.
- The number of sick crew members.
- The crew's supply levels.

For each option apart from 'Supply levels', use the arrow keys to highlight the characteristic you want to change, enter the new value and press RETURN. Note that you have to press RETURN after entering each part of the latitude and longitude (degrees, minutes and either N or S) and you should make sure you don't place the ship in the middle of a land mass! For details of how to alter the supply levels, see below.

When you have finished making changes to any of these characteristics, press RETURN to go back to the 'Teacher Options' screen. Press ESCAPE to cancel the changes.

Teacher options

Supply item	Amt.	Rec.	Dec
Salted beef	4700	4700	400
Cheese	4700	4700	80
Fish	4700	4700	3
Fruit/veg.	4700	4700	30
Game	4700	4700	60
Hard tack	4700	4700	900
Fresh meat	4700	4700	40
Oatmeal	4700	4700	50
Dried peas	4700	4700	900

Use the arrow keys to choose an item, and enter new value.
RETURN will complete changes.

Deleting a Crew

Altering Details of a Supply Item

Teacher options

Supply item	E	M	S	M	D
Salted beef	10	0	0	0	400
Cheese	5	1	0	0	80
Fish	4	0	0	0	3
Fruit/veg.	20	0	20	0	30
Game	20	0	0	0	60
Hard tack	20	0	0	0	900
Fresh meat	20	0	0	0	40
Oatmeal	20	0	0	0	50
Dried peas	5	0	0	0	900

Use the arrow keys to choose an item, and enter new value.
RETURN will complete changes.
ESCAPE will cancel changes.

Altering Supply Levels for a Crew

If you want to alter the current supply levels for a crew, highlight 'Supply levels' and press RETURN. A screen similar to the one shown here appears.

It shows each item, the current amount, the recommended levels, and the number of days before the item decays.

To make any changes, use the **arrow** keys to position the cursor correctly, enter the new value and press RETURN. When you have made all the changes you want, press RETURN to go back to the 'Alter a crew' screen.

You can delete any crew except the Cook master crew. To select 'Delete a crew', highlight it with the **arrow** keys and press RETURN.

The screen listing all the crew names appears. Choose the crew you want to delete and then press RETURN.

The message 'Delete this crew?' appears.

Enter Y and press RETURN.

Note that you cannot recover a crew once it has been deleted.

This option allows you to alter the characteristics of a supply item. Any changes you make here will affect any further crews that are created on this disc.

To choose 'Alter an item', highlight it with the **arrow** keys and press RETURN. A screen such as the one shown here appears.

For each item, you can alter the value of the following factors:

- Energy** This is the nutritional value per unit of item. This is important as it specifies how much work you can get out of a unit of food.
- Water** This is the amount of water per unit of a product.
- Scurvy** This is an anti-scurvy rating. For most products it is zero. It is a measure of the vitamin C found in that particular ration.
- Morale** This is a measure of how much morale will be boosted by issue of the particular ration. For example, rum is high in morale, while hard tack isn't.

Printing Crew, Supply or Port Details

Decay This is the life expectancy of the item in days. If the item is not edible and will not decay, it normally is given a value of 0.

All units are relative and must be in the range 0 to 250, except for decay which can be in the range 0-999.

Use the ↓ or ↑ arrow key to select the item you want to alter. Then, use the → or ← key to move across to the characteristic you want to change. Enter the **new value** and press RETURN.

Continue making changes to other items in this way. When you've finished, press RETURN again. You are returned to the 'Teacher options' menu.

If you change your mind and don't want to save your changes, press ESCAPE to return to the 'Teacher options' menu.

To print any of these details, highlight the correct option using the arrow keys and press RETURN. Your printer should be plugged into the parallel port underneath the computer. Make sure it is turned on and on-line.

When the printing is complete, you are returned to the 'Teacher options' screen.

Crew Information

When you choose 'Print out crews' you are asked if you want to print all the crews. Enter Y and press RETURN to print all the crews. To print the details of one crew, enter N and press RETURN. To choose the crew, highlight the crew name with the arrow keys and press RETURN.

The following information is printed for the crew you select or for each crew if you ask for them all.

- The crew name.
- The latitude and longitude.
- The date.
- The number of days spent in port.
- The current energy rating.
- The current water rating.
- The current scurvy rating.
- The current morale rating.
- The number of crew.
- The number of crew sick.

In addition, for each supply item the crew has on board, the current amount, the recommended level, the daily ration and the number of days before it decays, is printed.

Port Information

When you choose 'Print out ports' you are asked if you want to print all the ports. Enter Y and press RETURN to print all the ports. To print the details of one port, enter N and press RETURN. To choose the port, highlight the port name with the ↓ or ↑ arrow key and press RETURN.

The following information is printed for the port you select or for each port if you ask for them all.

- The port's name.
- The latitude and longitude.
- The description.
- The list of the nearest ports.
- The number of units of each supply item available.
- The repair limit.
- The maximum number of crew that can be taken on board.

The repair limit indicates the port's ability to repair ships. The higher the limit, the more repair facilities the port has. Students must, of course, choose to repair their ship before they can improve their ship rating in any port.

Supply Information

The following information is printed about each supply item.

- The energy rating of the food.
- The water content of the food.
- The anti-scurvy rating of the food.
- The morale rating of the food.
- The number of days before the food goes off.

Showing or Hiding the Demo Crews

The demo crews give you immediate access to the activities described in the previous section. Normally the demo crews are not visible on the list of crew names. However, sometimes you might want students to be able to use them. A group might, for example, request practice at one of the activities before continuing with their game. Or, you might want students to work on a particular activity.

To choose 'Show demo crews', highlight the option with the **arrow** keys and then press **RETURN**. Notice that the option changes to 'Hide demo crews'.

When you choose 'Exit menu' and return to the main menu, you will see the following extra crews listed:

- Longitude
- Rio adventure
- Venus transit
- Reef maze
- Botany Bay
- Batavia

Each of the six activities are described in detail in the previous section.

DIFFERENT WAYS TO USE THE PACKAGE

WITH YOUR STUDENTS . . .

IN GROUPS WITH 1 OR 2 COMPUTERS

HOW MANY VOYAGING GROUPS DO YOU HAVE?

You've probably got 28-30 students; divided into groups of 4/5. Assume the most likely number of voyaging groups will be about 6.

The next 3 pages give you a WORK PLAN for 6 groups, and a virtually unlimited number of sessions. It assumes you have one computer for each session.

The word PROJECT pops up; it's used to describe several different activities that AREN'T detailed. That's because what those PROJECTS actually are is up to you.

Finally, there's a quick rundown of ways to modify this master plan to suit more groups, fewer groups, two computers and so on.

IT'S NOT THE ONLY WAY TO DO IT;

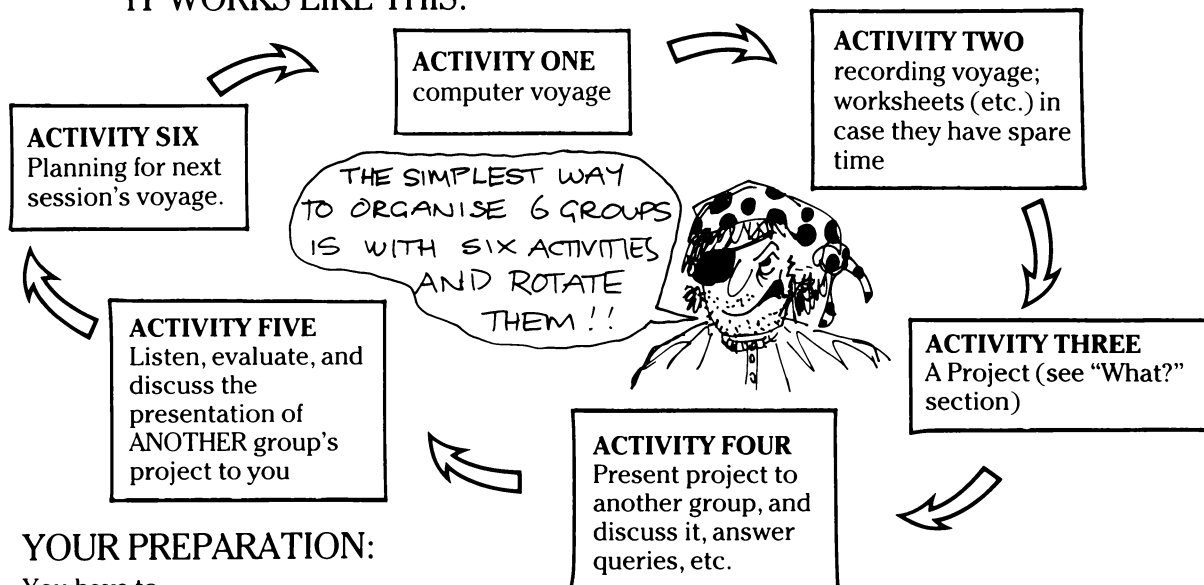
It's just that running group activities that are all different, in an interesting way, without going crazy, takes some careful planning. If you like the format of the plan on the following pages, you will have quite a few hours of work done for you.

You may well worry about the ability of some of your students to work more or less

independently. If you set the "projects" carefully with their group's interests and abilities paramount, you can minimise their reliance on you a lot. You may well find yourself in constant demand; but you will be in control of a very busy classroom.

Good luck!

IT WORKS LIKE THIS:



YOUR PREPARATION:

You have to

- set the project tasks
 - have extra (enrichment?) tasks available that are
 - self-explanatory
 - short
 - interesting enough to be self-sustaining.
- for the times that will undoubtedly occur — when they've finished and have 15 minutes to go before the bell.

Looks easy, doesn't it!

**If you look at the following table,
you can see more clearly
how this actually works
in practice**

POSSIBLE PROGRAM FOR 6 GROUPS

SESSION	Computer Group	Recording Voyage	Group doing Project, and which one (by number)	Presenting Project	Listening to Project	Preparing for Next Voyage
1	1		2, 3, 4, 5, 6 — discussion session with YOU			
2	2	1	3 & 4 PROJECT 1 5 & 6 PROJECT 2			
3	3	2	1 PROJECT 3	4 PROJECT 1 5 & 6 PROJECT 2	5 & 6 together 4	
4	4	3	2 PROJECT 4	1 PROJECT 3 5 & 6 PROJECT 2	5 & 6 together 1	
5	5	4	3 PROJECT 2	2 PROJECT 4 1 & 6 PROJECTS 1 & 3	1 & 6 2	
6	6	5	4 PROJECT 3	3 PROJECT 2 2 PROJECT 4	2 3	1
7	second turn 1	6	5 PROJECT 4	4 PROJECT 3	3	2
8	2	1	6 PROJECT 5	5 PROJECT 4	4	3
9	3	2	1 PROJECT 6	6 PROJECT 5	5	4
10	4	3	2 PROJECT 5	1 PROJECT 6	6	5
11	5	4	3 PROJECT 5	2 PROJECT 5	1	6
12	6	5	4 PROJECT 6	3 PROJECT 5	2	1
13	third turn 1	6	5 PROJECT 7	4 PROJECT 6	3	2
14	2	1	6 PROJECT 6	5 PROJECT 7	4	3
15	3	2	1 PROJECT 7	6 PROJECT 6	5	4
16	4	3	2 PROJECT 6	1 PROJECT 7	6	5
17	5	4	3 PROJECT 7	2 PROJECT 6	1	6
18	6	5	4 PROJECT 8	3 PROJECT 7	2	1
19	fourth turn 1	6	5 PROJECT 9	4 PROJECT 8	3	2
20	2	1	6 PROJECT 8	5 PROJECT 9	4	3
21	3	2	1 PROJECT 9	6 PROJECT 8	5	4

EXPLANATION OF TABLE

SESSION ONE

If Group 1 starts off at Activity One — computer — then all the other groups HAVE to do something other than Activities 2, 4, 5 and 6 — because they:

- have no voyage to record
- no presentation to listen to

- nothing done to present
 - no previous voyage experience to plan from.
- SO, this is the time YOU get to brief them about anything you wish to emphasise, or have a large group activity i.e. cooking, play making, and so on.

SESSION TWO

Group 2: Computer
Group 1: Recording their voyage of last session

***Group 3 and 4:** work separately on Project 1. This could be anything that will be relevant to the initial stages of their journey.

***Group 5 and 6:** work together on Project 2. Also anything to do with their voyage in general, or early part of it.

***WHY 2 PROJECTS?** — So that, later on, each group presents one project, and listens to and criticises a **different one**.

SESSION THREE

Group 3: Computer
Group 2: Recording voyage
Group 1: Project 3: something that will be relevant (**now that they have used the computer program**)

Group 4: Presents Project 1 to G.5 and 6 and listens to 5 and 6 present Project 2

Groups 5 and 6: Presents Project 2 to G.4 and listens to G.4 present Project 1.

By **SESSION SIX**, proceeding in the way laid out on the table, Group 1 will be preparing for their second turn, and everyone will have heard, or worked on, each of the first two projects.

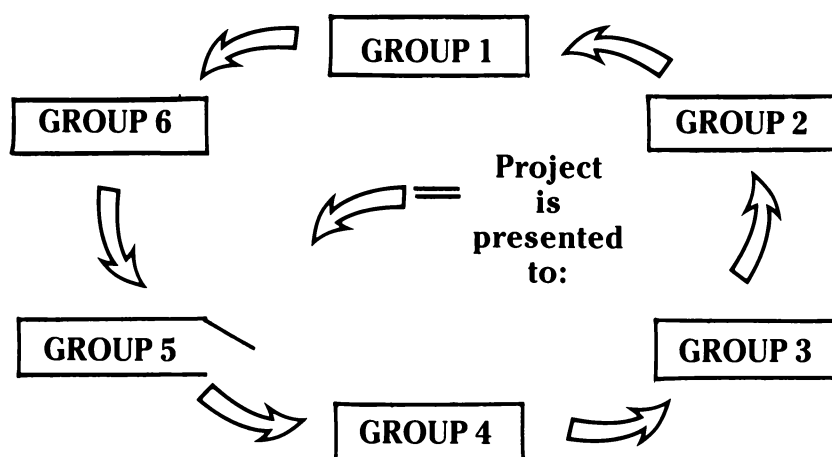
In programming the activities in this order, we have deliberately allowed each group only one session to prepare something that has to be presented in the next. Reasoning here is to keep the energy level high, and the amount of information absorbed reinforced quickly.

You will notice that, as the groups spread out to do all the activities you plan, Group 1 (for instance) always presents their project to Group 6, and always listens to Group 2's presentation. This means that, in practice, Group 1 has no contact with groups 3, 4 and 5. Group 2 has with Group 3, and Group 6 has with Group 5.

The reasoning behind this is to allow you a little leeway; with the levels of ability you are bound to have in your class, you can use this contact and non-contact to vary the difficulty of the projects.

The following diagram will explain this:

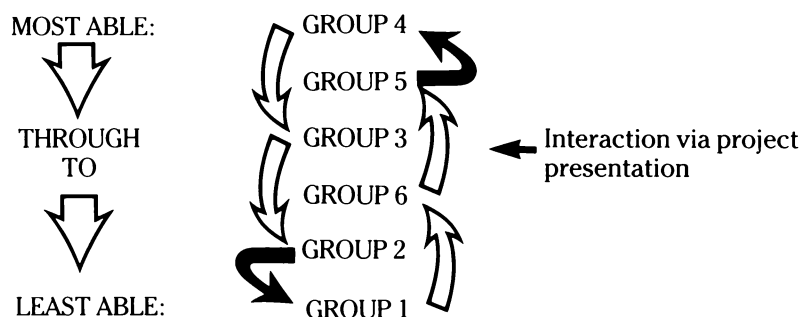
DIAGRAM OF GROUP CONTACT IN 6 GROUP PROGRAM PLAN:



If you put your bright kids in Group 4, and your not so capable ones in Group 1, then **YOU CAN ACTUALLY EXPECT DIFFERENT THINGS FROM EACH GROUP FOR THE SAME PROJECT/TIME.**

GROUP 4 listens to GROUP 5, and presents to GROUP 3. So Group 3 needs to be able to understand what Group 4 has worked on. This doesn't mean they need to have had the research skills, maths ability, or whatever, that GROUP 4 had in order to do their project. In other words, GROUP 4's expertise is being successfully shared with GROUP 3 — who may well find the opportunity to share it again with Group 2, whom THEY present to.

AT THE SAME TIME, GROUP 5, who've presented to GROUP 4 (and so also need to be pretty cluey kids), listen to GROUP 6, who listen to GROUP 1. If your groups range in ability like this:



N.B. See "*Getting Started . . . with activities on the computer*" section for details on levels of difficulty within the program itself.

BUT I HAVEN'T GOT 6 GROUPS!

THEN MODIFY!

5 GROUPS

— 5 Activities. Unite Recording session and Preparation session into ONE — directly after computer turn.

OR

4 GROUPS

— 4 Activities:
1: Computer
2: Record and Prepare
3: Project
4: Presentation — both groups present AND evaluate in same session.

OR

3 GROUPS

— 3 Activities:
1: Computer
2: Record and Prepare
3: Project

OR

OR

2 GROUPS

1: Computer
2: Record and Prepare

1 GROUP

1 — Computer

OR

7 GROUPS

2 sessions to work on project

OR

8 GROUPS

2 sessions to work on project to be presented; one extra session to work on any particular enrichment activities, special interest areas, art work etc. A different sort of "project", in other words.



I've got 6 groups and 2 computers

Make your 6 groups into 12, and do everything doubled

OR

6 Groups, 6 Activities:
1: Computer
2: Record and Prepare (together)
3: Computer
4: Record and Prepare
5: Project
6: Presentation and listening, too

It is highly likely that one of you, studiously (thankyou!) reading this, will have a situation that we haven't thought of here. Sorry. It is just as probable that one of you will think of a much better way of doing it, for your particular class. This is great, as long as you let us know about it!

● WITH THE WHOLE CLASS

If group work isn't your style, then there is a very simple answerput the computer out in front of the class and use the package with the whole class. In this format, a rather good way to introduce the package to your class would be to take them through Cook's actual voyage. (This is in fact the "default" setting on the teacher's options, so the program automatically runs this unless you change those options).

Using this approach you can broaden the decision-making process even further. Firstly you could give either each student, or each group of students, a copy of the map, the information cards, and possibly the crew profiles.

Then you can lead a discussion amongst class members as to the virtues or otherwise of plotting a particular course from your port. This may even take the form of a class debate, or something less formal, to decide the value to the country in even commissioning someone like Cook to set off in the first place.

Providing agreement is reached amongst class members that a voyage should be undertaken !!, the class then has to collectively, as a crew, plan their voyage and decide where they are heading.....a little bit of consensus navigation...which means that all students are involved in a discussion of the issues and problems facing a navigator in those early times.

Such a process could then be undertaken before each navigation decision, or be handed across to a navigator within the class, or a navigation group.

At an appropriate time in each lesson then , the class could move on to follow up activities as suggested on the relevant Enrichment sheets, or within other subject areas, as suggested in the Activity sheets.

BEFORE THEY SAIL

WHAT DO THEY NEED TO KNOW?

PREPARING STUDENTS FOR THEIR VOYAGE

They have a crew of 94.

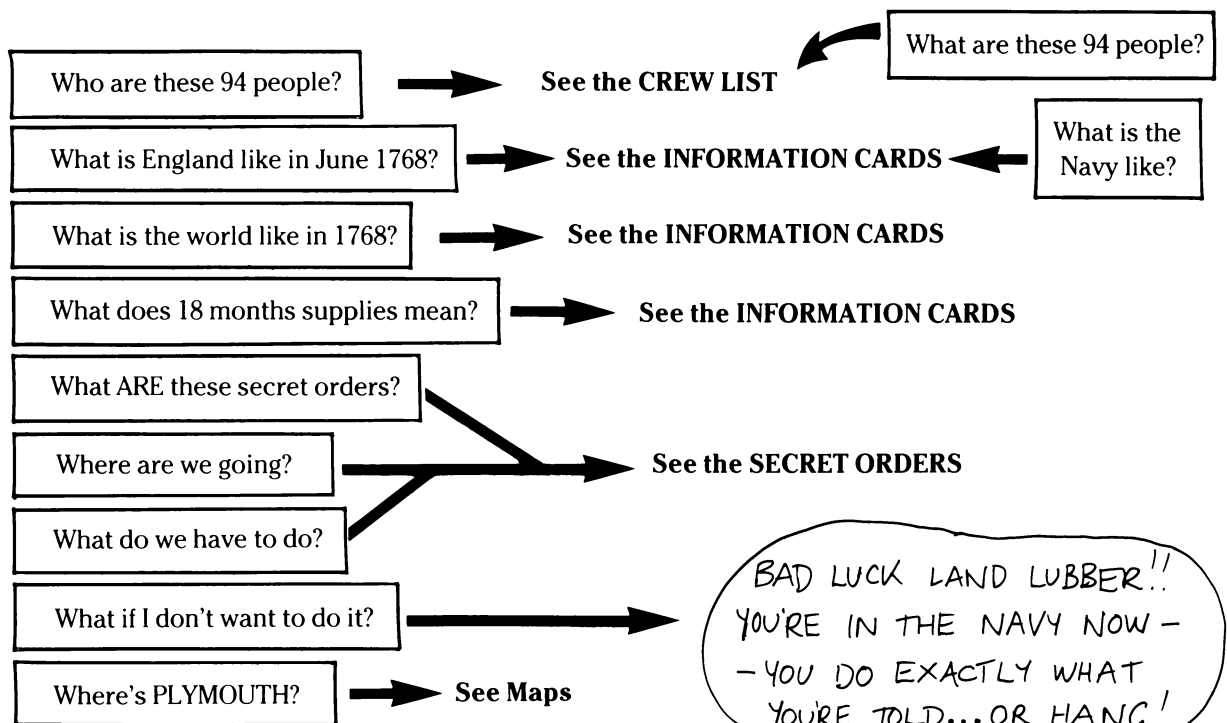
They are mostly English.

It is June, 1768.

Their ship, “Endeavour” is a naval vessel, equipped with eighteen months supplies, and charged to fulfil secret orders that will take you into the South Pacific.

They must sail from Plymouth as soon as possible, and fulfil these orders to the best of their ability.

If you tell your students this and then ask for questions, you will get some (or even all) of these:



The CREW LIST contains details of the whole crew, and personal files of THIRTY of the men on board.

The SECRET ORDERS are replicas of Cook's real ones. (There is a simplified version in the INFORMATION CARDS.)

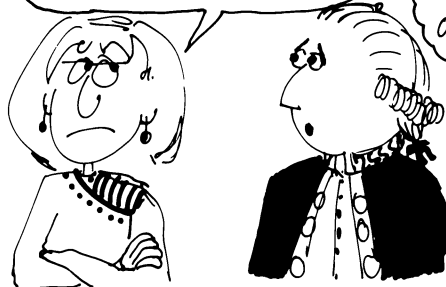
THE INFORMATION CARDS contain general details about almost everything you may want to know; they are designed to be used by kids.

The MAPS are drawn specifically to be photocopied in A4 sized joinable bits.

MOTIVATION

You MAY well find your group are off and racing just from giving them the start indicated on the preceding page. If so, IGNORE THIS PAGE, and let 'em go! Good luck!

BUT THERE'S NOT MUCH POINT IN DOING ALL THIS STUFF IF THE KIDS AREN'T INTERESTED.



BY HEAVEN, MADAM! I'D SOON GET THE BLIGHTERS **INTERESTED!!!** MASTHEAD THE LOT OF THEM. MUTINY, AY?? NOT ON MY SHIP, MY DEAR. FLOG IT OUT OF 'EM!! THAT'S THE NAVY WAY.

Seeing as you can't motivate in quite the "Navy Way", here are some subtler suggestions.

SOMETHING TO RELATE THEMSELVES TO:

The Crew List contains 30 indepth (well, comparatively) profiles so that there are some people on board for your students to really get to know — **Characters** — to enlarge upon in whichever way will suit your group the most.

DISCUSSION

Use the backgrounds of these people to build up a sense of reality about the voyage. (Consider **THEIR** reactions, not your own.) Set up specific situations to test what these people would do.

WRITING

"Autobiographical" information about these real people, their real homes, dreams, lives, problems, and destinies.

If you can feel history as if it was happening to you, you'll enjoy it more.

ROLE-PLAY

You have to divide your class into appropriate groups for the computer voyage; how about giving each one an actual person to BE on that voyage? You HAVE to have a Captain Cook* on each; the rest could be their own choice. Instead of discussing, act out set situations; instead of arguing, act out what could have really resulted on a naval expedition, in 1768-71. Act out the biographical data, act out the sailing, act out the whole thing!

*Captains of ANY vessel are, and most definitely WERE, in TOTAL COMMAND of their ship. You can cast your Captains with that in mind — or give everyone a turn at bearing this awesome responsibility — and power.

GETTING THEM STARTED

Imagine this scene: Your voyaging groups decided, you have given them all a different "persona" to take on as their own. They've maybe spent a week researching (from the Information Cards and Crew List), and perhaps have already developed their character's life in some writing, discussion, or group/situation role playing (i.e. acted out their arrival on board).

See off-computer activities for more ideas here

You open the sealed orders; you work out what they mean; and all the James Cook's set off with their crews and VOYAGE PREPARATION sheets, map, and brains ticking, to work out what, EXACTLY, they are going to do. And next time? They do it.

Their characters can re-emerge for decision

making, landfalls, shore-leave, interaction with natives — as much, or as little, as they (and you) desire. It's great when arguments occur. It's a springboard for more than drama and discussion — writing, thinking, drawing, and an interesting "twist to the plot", so to speak.

It also provides an amazing array of off-shoots: into their character's past and future (some of them died, on Cook's voyage, and some may well die on theirs!) and into their own.

Some of the novels listed in "Enrichment" are well worth a teacher-type browse (students too, of course). They give an atmosphere I haven't captured here.

A SUGGESTED FIRST LESSON

... Setting the scene

Set up as much visual material (from this kit and your school's resources), as possible.

Tell them the following:

“Today we are going on a trip. It won't cost you anything, and you won't have to take your lunch, although we probably won't be back for several weeks, and it's possible some of you may not return at all — although I hope that doesn't happen. It is going to be dangerous; you are going to learn a lot; about yourselves, as well as quite a few other things along the way. You will have to travel thousands of miles, over unfamiliar territory, in a way that is totally new to all of you.

We are going back in time.

Back to a world well known to your great-great-great-great-grandparents, because they are alive there. Back two hundred-odd years.

What you do next depends on your own dramatic bent, and the effect this announcement has had on your class. You can be really melodramatic and have a soundtrack explosion, or just slam a big book on your desk, or scroll back through history

on a magic carpet or in a time machine (set the dial on your desk and get them to brace themselves), passing men on the moon, World War 2, 1, Federation, etc. until you all end up in England in 1768.

It's June. Summer. In the country, the wheat is golden, the trees are full of growing fruit, lots of bees are buzzing about. It's quite hot — at least 20°. In London, the smell is worse than usual; there has been no breeze to speak of for days, and the air has that heavy feeling you get before a thunderstorm. Everyone you pass on the street stinks to high heaven — and LOOK! You can see lice crawling through the hair of that man in front of you! Must be hundreds of them.

But we're not staying here. Our destination is Plymouth; one of England's great sea ports, on the Southern coast of Cornwall. Our ship is waiting for us there.

*There she is . . . **show picture if you like . . .***

The “ENDEAVOUR”. 366 tons; 30 metres long, 9 metres wide, and filled to bursting with supplies and equipment for our voyage. A converted coal ship, she's the pride and joy of our Captain, and the Navy's newest acquisition.

Yes; our ship is a Naval Vessel; our voyage is a naval expedition. All I can tell you about it at the moment is what is public knowledge: we are bound for Tahiti, a newly discovered island in the South Pacific, and we are to observe the Transit of Venus there next June — or at least, one of our passengers is — a Mr. Green, astronomer, from the Royal Society. (They're a collection of scientists.) And we've got a couple of naturalists coming as well, and two artists, to take notes and draw pictures of all we discover.

That is all that everybody knows about this expedition.

The REAL NATURE of the voyage is contained in these secret orders.”

SHOW THEM THE ENVELOPE

“Now. Although you all think you know all about time travel, because you may have all watched ‘Dr. Who’, there is one thing about it that the writers of that show overlooked. The energy level of the Universe has to remain constant. This means that even ONE EXTRA LIVING BEING OUT OF ITS NORMAL TIME SCALE will have massive repercussions. In short, it’s impossible, without taking terrible risks. Oh, you are here okay; back in 1768. But your body isn’t. Your mind, your twentieth century knowledge and attitudes, must inhabit the body of someone who actually exists in 1768. You — EACH ONE OF YOU — will seem to be one of the real voyagers on this ship.”

This may well cause considerable discussion.
You can: 1. Pursue it
 2. Curtail it and carry on with . . .

“This is how it will work. Your voyage has to be successful if you are to survive it. This means you will have to acquaint yourselves with your character’s job, personality, and abilities, as much as you can; otherwise you will endanger its success. For instance, several of you will be borrowing the body of the Captain, and will therefore be in charge of the whole expedition. If you don’t find out what you should be doing, it’ll be doomed.”

”

YOU MAY LIKE TO DISCUSS THIS POINT FURTHER.

From this point you can proceed in several different ways:

1. Give each individual a character to familiarise themselves with (from the CREW LIST — photostat and distribute).
2. Allot them their separate voyaging

groups, give them the whole CREW LIST and let them choose for themselves.

3. Let everyone research themselves, and use their chosen characters as the basis for sorting out voyaging groups using them.

THIS POINT IN THE SESSION IS THE BEGINNING OF YOUR CHOSEN PLAN OF ORGANISATION

It is also the beginning of the child’s own input —

and I happily hand the rest of the session over to you.

DON’T FORGET:

1. Each voyaging group has to have a decision-making role — in other words, a Captain Cook — even if they rotate the role, or do it collectively (your time-travellers can be telepathic!).
2. You don’t need to even HINT at the computer part of the program yet, unless you feel it necessary.
3. The purpose of the above is to motivate. You can spend the next few sessions delving into the CREW LIST and INFORMATION CARDS, and generally building up a background of knowledge about the time and place, conditions, people, and so on, as you see fit.

FURTHER SUGGESTIONS:

When you’ve spent some time on all the research you’ve decided is appropriate, and you feel the class is ready to set sail, then this is the time to read them their



☆☆☆☆☆☆☆☆☆☆
 ☆ SECRET ORDERS ☆
 ☆☆☆☆☆☆☆☆☆☆

N.B.

If you feel the real orders are too difficult to keep interest high, give them a copy of the simplified version, on INFORMATION CARD No. 5.

*For specific activities to give them the knowledge for the trip, see ACTIVITIES in the “WHAT?” part of this booklet.

BON VOYAGE!!

Design Assumptions

In producing this simulation, we have had certain objectives in mind. We have not set out to produce an adventure game based on Cook's voyage but rather a simulation of what Cook and his men probably would have gone through.

What we have really developed is a hypothetical voyage environment which approximates the conditions under which the voyages of Cook took place. It is limited by what research has revealed about those times and the constraints of a microcomputer running the program. In creating this environment we have then sought to allow students to explore the opportunities and challenges which that environment or 'world' provided.

It is impossible to develop a simulation of this kind without making some assumptions in the design phase. We have attempted to make the simulation as wide and varied as possible, whilst keeping it realistic, accurate and enjoyable. Below are the details of the key assumptions we have made.

The Map

Drawing a map of the world is very difficult as it involves a large amount of information. Because of the capacity of the computer, we were able to divide the world into one degree squares for mapping purposes. Details of the currents and the wind information were gained from atlases and a 1770 wind map. The port details and associated information about each port were thoroughly researched.

The curvature of the earth is simulated by using trigonometry to vary the distance covered on a curved surface.

It was impossible to predict all the places where a crew might land and what might be available at those locations. Thus, we have used the term 'landfall' to describe all landings that are not at designated ports. The types of supplies a crew can take on when they make landfall do not vary — no matter what part of the world they are in.

The map shows longitude measured in degrees west of Greenwich — from 0° - 360° — as it was in Cook's time. The simulation shows longitude measured in degrees west and east of Greenwich as is the current practice, since the introduction of the International Dateline. This makes it easier for students to refer to current atlases. It also may be important to note that atlases can vary a little in the respective location of various ports!

Units for Supplies

The amount of supplies carried and the variety may not be completely accurate. Because of the variety of types of supplies, it was impossible to come up with a measuring device. For instance, what units do you measure navigational equipment in, or a blacksmith's anvil? It may be an interesting exercise to go through this with your class to give them some ideas of weights and sizes and packaging of equipment. For instance, do you measure water in pints, litres or barrels? To overcome this problem, edible items were divided into serves. There are no clear records of exactly what was packed on Cook's ship. What we have done is to research the types of supplies normally taken on ships of this era and the information we could find out from Cook's records to make up the ship's supplies.

Events on the Voyage

It is impossible with what we know about Cook's voyage to precisely retrace his steps. The events and conditions must contain a degree of randomness by the very nature of the simulation. This was deliberate. We are not trying to re-create Cook's voyage but rather to re-create the conditions that Cook travelled in and what might have happened. For instance, Cook was very lucky when he rounded Cape Horn as he managed to do this in a few days. If the weather conditions had been different he could have taken weeks and even months to travel this perilous coast. It would, therefore, be an interesting exercise to compare a student crew's voyage with that of Cook's. You might like to use the time lines in Information Card 23 as part of any activity you devise.

Many of the events that happened to Cook will happen to the student crews but maybe not at the same time or place. We have, however, built some activities into the simulation which mirror very closely some of the problems Cook faced and occur under similar conditions. These activities include trying to obtain supplies from Rio de Janeiro, measuring the transit of Venus, anchoring at Botany Bay and navigating the *Endeavour* through the Great Barrier Reef. The events which these activities simulate have been researched thoroughly and the activities should help increase the students' empathy with Cook and his crew.

We also had to make decisions about the speed of the trip. As most students do not have three years to spend doing the simulation, it had to be condensed. This is an important fact to point out to the crews so that they keep track of the dates to get some feeling for the passing of time. You may try to incorporate what you were doing two years ago both in real life and during the simulation.

Finding a Port

The size of each port is very small in comparison to the distances you are travelling. Cook would have had maps for the known ports around the world and therefore could find his way to a port when he got near by recognising landmarks. It is impossible to simulate this directly as the detail would take up too much room and make it too tedious for students. Instead, whenever you sail very near to a port, the ship makes for it. You can, of course, decide to leave immediately.

The Rating System

During the progress of the simulation, the student crews are rated. This rating is not visible on the screen and students do not need to be aware that points are being compiled. They should, however, be aware that decisions they make during the voyage will determine whether or not they are promoted or demoted when they return to England and that on completion of a successful voyage, they will be issued with a certificate that gives them a ranking.

Both a seamanship and ship rating are maintained. The seamanship rating reflects factors such as navigation decisions, crew morale, supply levels and general seamanship skills. The ship rating reflects the seaworthiness of the ship. The final ship rating also affects the seamanship rating.

The Seamanship Rating

On leaving port for the first time, each crew is given a seamanship rating of 70. This is the equivalent to that of a lieutenant. If they complete the voyage as successfully as Cook, they will tally between 76 and 84 points and be promoted to commander, as Cook was. Should they complete a more successful voyage than Cook, they will be promoted to the rank of captain. However, they can just as easily fail to complete the voyage as successfully as Cook did and be demoted to a lesser rank.

Each rank and the score required to achieve it is shown below:

SEAMANSHIP SCORE	RANKING
85+	Captain
76 - 84	Commander
56 - 75	Lieutenant
46 - 55	Master
26 - 45	Midshipman
16 - 25	Able Seaman
Below 16	James Cook R.I.P.

The Ship Rating

Each crew begins with a ship rating of 100. The ship rating is decreased by one point for every five days at sea. However, five points are gained for every port or designated anchorage that they enter. In addition, bonus points can be obtained for calling into various key ports. These are Rio, Tahiti, Queen Charlotte Sound, Batavia and Capetown.

There is a relationship between the ship and seamanship ratings. At the conclusion of the voyage, the seamanship rating increases by one point for every 10 points above 70 of the ship rating, and decreases by one point for every 10 points below 70. This is to reward or penalise crews depending on whether or not they kept the ship in good condition.

If the condition of the ship deteriorates too far, it may sink and the voyage will end ingloriously.

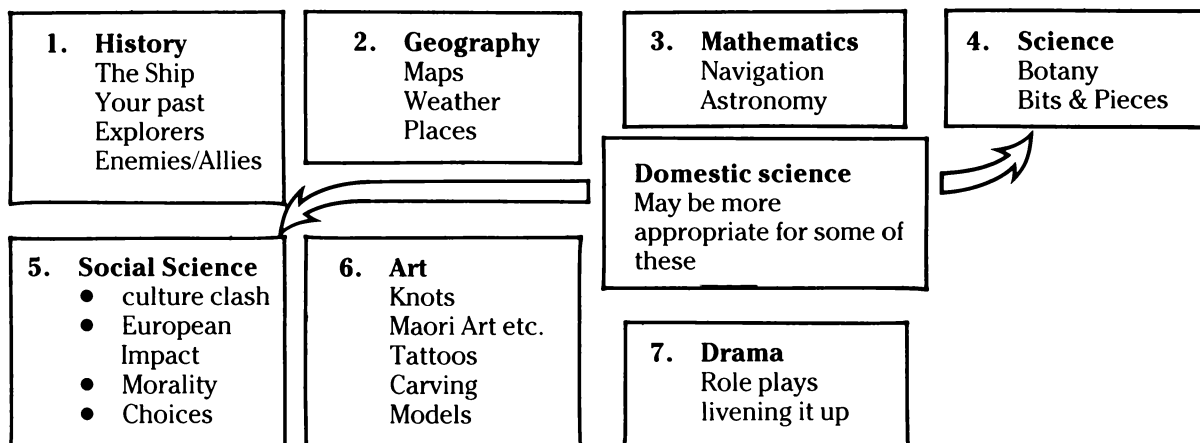


Cook's Endeavour
SPECIFIC CURRICULUM
ACTIVITIES

Activities for various curriculum areas

- History
- Geography
- Mathematics
- Science
- Art
- Social Studies
- Drama

This section has been written under area/subject headings:

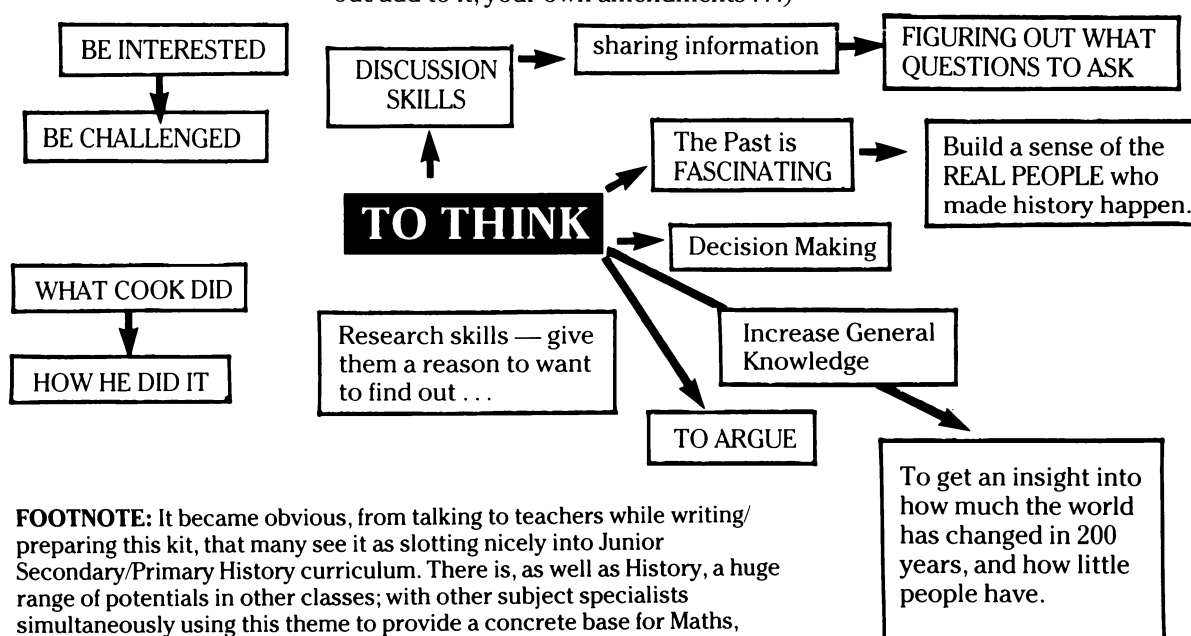


- These Activities are listed in two categories: QUIET and NOISY.
- They begin with the simpler tasks, and generally end with things only older (or very capable) students will benefit from.

As the possibilities and scope of this kit's theme are VAST, you may find it helpful to think (and even write) out your general aims — either now, before looking at the actual activities that begin overleaf — or after you've browsed through them. Without unlimited time and/or expertise, ALL of

the activities outlined are obviously not viable for one teacher and one term's work. You are going to have to choose what you do for the off-computer parts of your planned program (and no doubt, think of things this guide does not include!).

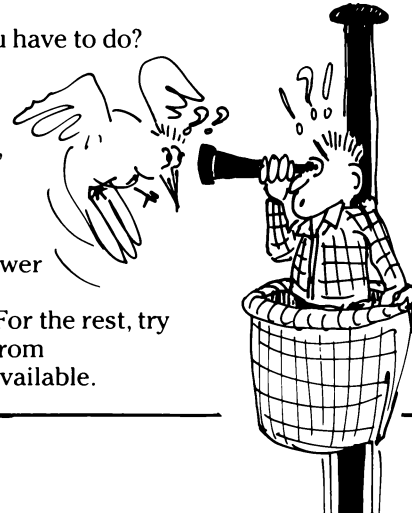
You may be interested in the basic aims behind writing/researching this kit: (and cross out/add to it; your own amendments . . .)



FOOTNOTE: It became obvious, from talking to teachers while writing/ preparing this kit, that many see it as slotting nicely into Junior Secondary/Primary History curriculum. There is, as well as History, a huge range of potentials in other classes; with other subject specialists simultaneously using this theme to provide a concrete base for Maths, Science, Home Economics, Art, Drama, English, Geography, Social Sciences, Economics, Politics — you name it, it's relevant. Instant Integrated Studies? Or perhaps just not only the History classes.

HISTORY

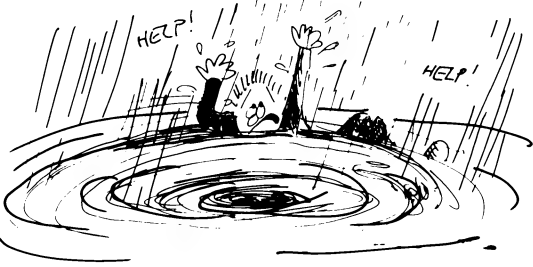
The following is laid out under each area in increasing levels of difficulty, and divided into “quiet” and “noisy” because we realise that this is necessary as a consideration.

QUIET ACTIVITIES	NOISY ACTIVITIES
TOPIC: THE SHIP The ship, and what has to be done to keep her sailing.	
Make a timetable of your character's days for one week. Fill it in with sleep, meals, and your jobs on board.	Mark out an area as big as the crew's quarters. Where is your spot?
Mark where you sleep on the plan of Endeavour.	Make an interesting play or tape based on how your fellow voyagers get on with each other. Imagine how your character would react to the others.
You have a sea chest of your own, or more depending on what role you are playing. What have you got in your chest?	Your first stop is Madeira; it is a busy port, much like home, but few people speak English. You've got shore-leave. Discuss or act out what you would do.
Write or make a comic-strip out of what you saw and felt on your first night at sea. Did you get sea-sick? How was dinner? Have you got any friends? What do you think of your fellow voyagers.	Mark out the whole lower deck of the ship (on a basketball court, in chalk).
Make a list of the smells on board.	Pretend you are actually on board this chalk ship. What do you have to do?
On the plan of Endeavour, put in where all these things go: (make a reasonable deduction). • live animals • gun powder • cooking gear • food • water • ballast • Bank's gear • wood (for fires) • sails • rope (spare) • rum and wines • guns • carpenter's tools • blacksmith's tools • human excrement	Write down questions that you ask, and discuss them. Use information cards to answer as many as you can. For the rest, try finding out from references available. 
TOPIC: YOUR PAST Personal Histories thought about, and characters on board enlarged upon.	
Write an autobiography of your character's life so far.	Act out your departure.
Draw a picture of/write about Your house, home town, your family.	Act out, or present to the class, an outline of your life so far. They can ask any questions they like, so you'll have to make the answers up quickly! (This could be a regular 2-a-session sort of activity, for the duration.)
Write a letter to someone you care about, describing the voyage so far.	

History continued.

QUIET ACTIVITIES	NOISY ACTIVITIES
List your personal likes and hates about the voyage, your fellow travellers, the world in general, etc.	Discuss (in period) the reasons for expecting a Great Southern Land.
Delegate groups or individuals to find out what was happening at this time in: North America Portugal Spain Holland France Africa Asia From the English perspective. (The navy, and the looming “menace” of Napoleon, may interest the sailors.)	Discuss WHY you think England wanted to explore the South Pacific. What could they possibly get out of it? There are lots of interesting characters that individuals or groups could look up and report on to the class — • Drake • Magellan • Tasman • Dampier • Dalrymple • Maskelyne • John Harrison • Halley
Find out what was happening in England before you left. • Industrial Revolution • Food Riots • King George III • Boston Tea Party • Steam Engines just for starters!	
TOPIC: OTHER EXPLORERS	
This area is very interesting, but will require good research skills, and depend on what your library has available for students to work from. It could be run as individual or group projects; as a tutorial-type presentation to the rest of the non-computing class; or . . . The explorers your group chooses need not be pre-Cook either; although there is a lot to be got out of researching them you may feel the need to look at what happened to Australia, New Zealand, and the rest of the South Pacific as a result of his voyages.	→ as sketches presented to demonstrate what other voyagers went through. With older secondary students, it may be very profitable to divide them into natives and Europeans, and role-play the inevitable misunderstandings and different needs and concerns of the two confronting points of view. You could stimulate some rowdy discussion about the culture-clashes that are still going on.
TOPIC: POLITICS — ENEMIES AND ALLIES	
Probably only useful to older students, but quite fascinating, is researching into the reasons behind European Empire-building and exploration as a result of the push for foreign trade; the competition for new markets between European countries, and the repercussions of the Industrial Revolution and other topics as appropriate to your curriculum.	. . . as above, this could produce some lively debates — formal or informal.

GEOGRAPHY

QUIET ACTIVITIES	NOISY ACTIVITIES
TOPIC: MAPS	
Map your planned voyage.	Making maps of your own — • orienteering • treasure hunting with direction and distance instructions, and separate groups producing the maps and instructions for each other. • directing a blindfolded partner by compass points and steps to take, to a common goal; this can be set up as a time trial. (It's great fun, too.)
Estimate distances, measure the time each leg is likely to take, clothes required for particular climates.	
Latitude and longitude — what, why, and how?	
Grid references: how to read the maps for the computer program.	
Look at different sorts of maps. Recognise the problems of distortion involved in drawing a flat picture of a round (well, more-or-less round) ball. Have a globe handy!	Draw a scale map of room, school, etc.
TOPIC: WEATHER	
As this actually effects the voyage directly, everyone will come to realise the importance of prevailing winds to a sailing ship! Then there is the reversal of seasons in Northern and Southern Hemispheres; climatic differences as distance from the equator increases/decreases, and so on. You will need to teach these points along the way.	Set questions for students to figure out the answers to: (use discussion to think-tank possibilities). • Could we collect fresh water from the rain (if it does)? How? • Does it matter whether it's winter or summer where we plan to go? • Could we catch fish to eat as we sail along? How? • What would happen on board if there was a terrible storm? Consider: big waves lots of rain gusts of strong winds poor visibility wet and slippery decks and rigging torn sails, broken masts and spars. • What would YOU do to cope with each of these problems?
Set questions for students to find the answers to (use available texts to provide the answers). • Why is it summer here when it's winter in the Northern Hemisphere? • When is it winter, spring, summer and autumn here and in the Northern Hemisphere? • What can we expect to learn about the winds as we travel around on Endeavour? • How far south can we go before we have to worry about icebergs? • Why DO we have to watch out for icebergs? • What will the weather probably be like in ... (list a place or places that will be relevant). • Look in an atlas for a map that shows climate of places around the world. Can you make any rules up that will tell you where it's likely to be hotter and colder, wetter and drier?	
TOPIC: PLACES	
<i>Similar sorts of questions can be written by you for each place. It depends on your class and group's circumstances, as to what is appropriate.</i>	

MATHEMATICS

QUIET ACTIVITIES	NOISY ACTIVITIES
TOPIC: SIMPLE MATHS SKILLS IN USE	
Voyage planning requires all sorts of sums. Estimating time needed for each leg; working out direction; speed; allowing for time lost in storms, doldrums, port visits, and so on.	Measuring out a replica (in chalk) of one or two of Endeavours' decks on a basketball court is all maths.
There are several prepared activity sheets in the "Enrichment" section which may be useful in the maths area and suitable for some or all of your students. Have a forage through them, you may well get ideas for something better.	Working out provisions needed. Actually cooking with equivalent (or replicated!) ingredients, is maths — and a worthwhile exercise if you have the facilities.
TOPIC: NAVIGATION	
The computer program itself has been written to allow the most unmathematical mind a chance to succeed. In doing this, we have by-passed real navigation skills as one option. IF you have students capable of coping with its intricacies and keen to do so, look at the suggestions in the "Enrichment" section under Navigation. It has tremendous uses for students who are doing trigonometry in maths; if you are running Cook's Endeavour in a secondary school, perhaps the class maths teacher/s could be encouraged to use this "real" situation to hang the theory on.	If you are lucky and can get hold of either a sextant, or better still, someone who's an old sea dog and can demonstrate taking a sighting to your students, go for it! (And get the visitor to spin a few yarns . . . the real flavour of the sea is hard for land-lubbers to reconstruct, but a real sailor can't help but bring it with him.) 
TOPIC: ASTRONOMY <i>You really need to go the whole way with this and stay out one clear night with star charts and binoculars and a telescope. Finding the constellations takes precision direction finding, and the experience will be one to remember!</i>	



SCIENCE

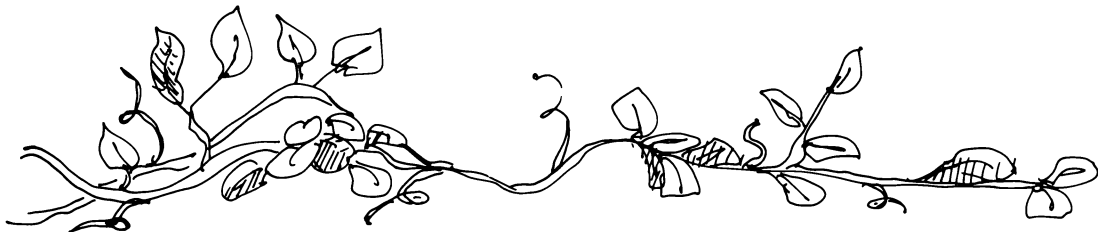


NATURAL HISTORY IN PARTICULAR

Both Banks and Solander were deeply influenced by Linnaeus:- Solander was taught by him, and Banks taught of him. This means that they were both bent on not only discovering any new plants or animals, but on labelling them correctly — fitting them into a slot amongst the already catalogued families of known plants and animals. The 18th Century was rife with new discoveries, and Linnaeus had already provided the system with which to group them so that they could be readily identified by naturalists everywhere.

The following activities all involve some plant collecting, and an excursion is an obvious springboard for this. If there is an Australian Natives Nursery nearby, with a willing proprietor, then that may be the best place to begin.

QUIET ACTIVITIES		NOISY ACTIVITIES	
TOPIC: PLANT CLASSIFICATION			
Collect specimens of plants growing in the school garden. ● look for similarities ● experiment with classifying according to different things — ● leaf shape ● plant size ● flower-stamens -petals -color and/or anything else they come up with.		Discuss how to record and keep what from what. — labelled plastic bags — plant types — tree — bush — ground cover — others	
		Discuss how plants are divided into families.	
		Discuss WHY we do it that way.	
Get an expert to explain how plants are classified and why.		Go out and have a look at what grows in the closest available wilderness. Think about how environment affects what grows where.	
Make a display out of their collections and groupings.			



SCIENCE — BITS AND PIECES

The following are thoughts and directions for research and experiments rather than planned activities. We hope they'll be more useful left in their seedling state for you to develop or discard as you require.

SCURVY: The Chinese sailors, who went on equally long voyages as their European counterparts, WERE NEVER AFFECTED BY SCURVY. Think about Chinese food and see if you can figure out a non-perishable thing that they had to save them!

TIDES: If your school is near the sea, check tide tables (in the paper each day) and make two visits to the same place at high and low tide. Measure differences, note what lives where; this is a huge area and your school's science department may like to take it on separately.

WEATHER: Just measure the differences in good and bad sailing days, in your area, for a while. Note wind direction — see if you have a prevailing wind!

PRESERVING THINGS — look at ways to keep:

- food
- wood
- iron tools
- canvas

in a useful state with C18th technology as opposed to C20th technology.

QUILL PENS AND INK: Fountains pens, biros, and PENCILS as we know them haven't been invented yet. Writing was all done with a goose (or other) feather quill, cut and trimmed by the user. Ink was made of various things, amongst them, soot (lamp-black!) and gums; look this up and have a go. Imagine—no rubbing out! Slates and slate pencils (a type of pencil used in sketching) may also be an interesting exploration.



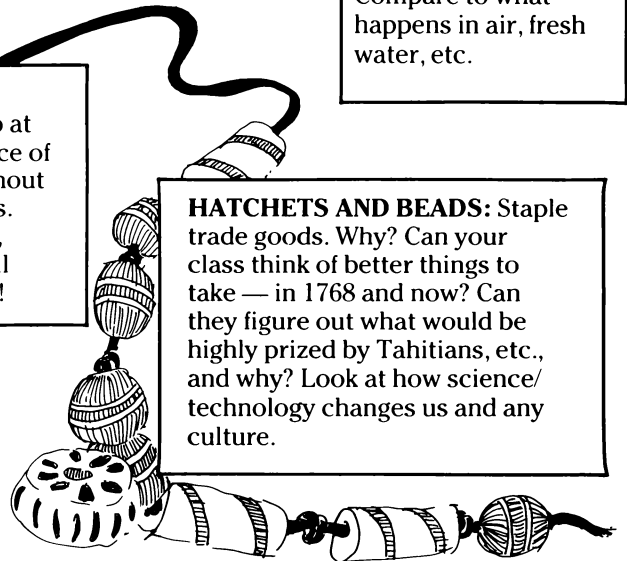
GERMS: Sailors were incredibly hardy people; in Cook's time, surviving to adulthood was a test in itself. Microscopic study of the "preserved" foods you've prepared and kept may be extremely enlightening. Look at what we now know about diseases and compare means of prevention.

HOW SALT WATER CHANGES THINGS: Experiment with salt water and iron, wood and canvas, rope, clothes, leather; see what actually happens. Compare to what happens in air, fresh water, etc.

ASTRONOMY — HISTORICAL AND THEORETICAL: It's interesting to have a go at explaining the appearance and disappearance of the sun, moon, and stars in logical ways without resorting to modern knowledge and theories. Students can come up with some wonderful, reasoned explanations — many of which will sound remarkably similar to some old ideas!

LIVING OFF THE LAND: If you've got any virgin bush handy, just have a look at what you COULD eat if you had to and what you could use to survive.

HATCHETS AND BEADS: Staple trade goods. Why? Can your class think of better things to take — in 1768 and now? Can they figure out what would be highly prized by Tahitians, etc., and why? Look at how science/technology changes us and any culture.



ART ACTIVITIES

None of these are EVER quiet, so:

KNOTS:

fascinating, decorative, or practical, the potential here ranges from just tying them, to turk's heads, rope-making, macramé, netting, embroidery (sailors did do a lot of this, believe it or not) and multi plaited belts, whiphongs(!) — there are books and books full of HOW TO's for all of these.



MAKING COSTUMES:

for fun and/or for authenticity. You could settle for paper replicas of hats, suited to individual's characters; or really do it in style.

TATOOS — textas are great for this; just the right horrible faded colours after a few hours! You may well steer clear on aesthetic grounds, but it's worth a mention.

THE "POLLY WOODSIDE" MELBOURNE MARITIME MUSEUM HAS A GREAT HANDS-ON DISPLAY OF NAUTICAL KNOTS.

SCRIMSHAW—

Carving on jawbone or teeth of whales or walrus tusks. Sailors carved ivory, whittled wood, made stone figures, rope dolls, skin pouches and belts. You can have a go at all of them; (soap is a substitute for ivory if you're short on walrus tusks).

MAKING MODELS:

Time consuming, and needing lots of patience, but to some kids this is a real labour of love. Try matches! (Prepared kits have their place here, too.) Ships (IN BOTTLES); dioramas of scenes from their voyages; working models of things like log-lines, sail-rigging, anchor winches; there are lots of possibilities.

MAORI ART

The spectacular abstract designs that Parkinson recorded so carefully in New Zealand, are well worth a look, and are a good springboard for older kids interested in intricate designs. You could have a great time making up "Maori" type faces with kohl pencils, for instance.

BEING BANKS'S "DRAUGHTSMEN"

Parkinson and Buchan were employed by Banks to make accurate visual copies of what they saw. Parkinson painted plants and animals; Buchan was hired to paint scenes and people in the new lands they ventured to. Watercolours for the former; chalks, graphite sticks, and oils for the latter. You may like to give your kids a try at doing as "their employer" requires.

BUILDINGS: Fort

Venus (scaled down, of course!) Various native houses; you can make great models of all of these, and use Parkinson's and Buchan's drawings for information.

Not to mention: Aboriginal and Tahitian art, flags and their designs (together with their use as nautical signals), map drawing as an art form; ship's figure-heads; and calligraphy-handwriting as an art. Have fun with all this!

SOCIAL STUDIES

As the possibilities in this area depend greatly on the maturity of your particular class, this part is also set out as an idea-bank rather than specific activities.

CULTURE CLASH

What happens when two totally different peoples have to inter-act? Tahiti and New Zealand are two good examples of different responses to the same alien visitors (or had Cook's crew changed by the time they got to New Zealand)?

OTHER THINGS:

- press-ganging
- introducing new diseases
- reasons for the strictly upheld division between officers and crew
- some specific details that may be useful are included in "Enrichment"

EUROPEAN IMPACT

Moorehead's "The Fatal Impact" is an obvious reference here.

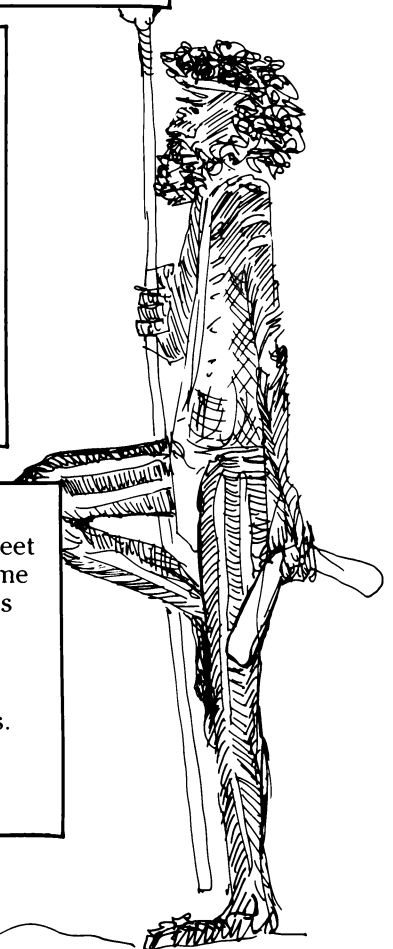
- What happened after Cook?
- What would perhaps have happened without him?
(The voyages of your class can hopefully provide material that will indicate different ways the ACTUAL VOYAGE could have turned out; extending their experiences, and imagining the different repercussions they would have caused, will be an extremely interesting exercise.

MORALITY — great discussion topic/s:

- Should Cook have allowed his men to associate so freely with the Tahitian women?
- Discuss the different attitudes to sexuality that were operating in Tahiti — if appropriate
- Wrong and right — which is which in situations such as:
 - taking hostages in order to force the Tahitians to return observatory equipment, and deserters
 - the Tahitians taking any foreign thing they wanted to
 - "Taking Possession" of inhabited lands, for king and country, even with the dubious agreement of their peoples.

CHOICES

- different ways to react to the natives you meet — list ad infinitum (you can have a great time thinking up all sorts of sublime to ridiculous ideas — many of which have an historical precedent!)
- the crew itself, and how they inter-act, is a rich source of decision-requiring situations.
 - who does what
 - getting on together in close quarters
 - avoiding mutiny



DRAMA

— SITUATIONS FOR DRAMATISING; HISTORICAL BACKGROUND AND CHARACTER- CREATING

PRESS GANG

Captain orders boatswain to take a couple of men with him and round up any healthy looking British nationals for service — he needs 2 extra men. The press gang has to fill this quota; set the place as wherever most relevant. The law allowed naval patrols to do this, anywhere, and theoretically anyone capable of “pulling his weight” had no right to refuse.

ATTACK? Two huge canoes, with at least 100 frightening-looking warriors, waving clubs, spears and shields and making a horrible din, are approaching rapidly. What do you do? (½ has to be warriors, the other ½ crew.)

SUNDAY DINNER, 2 WEEKS OUT — OFFICERS, “GENTLEMEN”, AND CREW

Make up conversation over this meal, noting what each set of people are eating, saying, thinking about; who is getting on with who, and so on. This could be 3 separate activities; it can also be repeated further and further on through the voyage.

GALE: A powerful thunderstorm blows you this way and that. What happens on deck? What has to be done? A man goes overboard; try to rescue him.

SAYING GOODBYE: Any character, parting from his family and/or friends just before the voyage. You could do this within each voyaging group for each individual’s character, one after the other; it’s their job to direct the others in their group to play appropriate parts.

SHIPWRECK: It’s midnight, and without warning you strike a hidden reef and are stuck fast. It’s high tide; two-thirds of you were fast asleep. Water is rushing into the hold fast. What do you do?

COMMUNICATION: You want to trade with the local people — whatever you’ve brought as goods, trade in return for fresh food, interesting clothes etc. of theirs. You have no idea what they are saying. How do you communicate?

DISOBEDIENCE: A seaman refuses to eat his ration of fresh albatross stew and scurvy grass, wanting his usual salt beef instead. (This really happened; he got 12 lashes with a cat o’ nine tails.) What do YOUR group’s captain, officers, gentlemen and crew do?

There are obviously far more situations that would benefit mightily through being worked on, presented and discussed in this way. These few ideas are just a beginning, but we hope they will give you some good feedback.



Cook's Endeavour STUDENT RESOURCE SHEETS

The following pages are meant to be photocopied as you require. They will hopefully be useful to your voyagers.

PLANNING:

1. Provisions: checklist to keep track of what's left.
2. Voyage Planner: a first and second planning sheet, to make sure they have worked out the necessary information.

RECORDING:

1. Frontispiece for a Log Book (with lots of space for individualising it).
2. Page to run off for the rest of their Log Book.
3. Log of Discoveries: so students can record and name any uncharted discoveries themselves.
4. Calendars for 1768-1771.
5. Voyage Summary — can be used as a reference for the teacher; it gives you an idea of where each group is up to, and what has happened to them, at a glance; it also gets the students to assess these factors after each computer session, and put them in a summary form.

Voyage Plan:

Where are you? _____ LAT / LONG: _____

Where do you want to go? _____ LAT/LONG: _____

How far is it? _____

How long will it probably take? (divide distance by go, - average mileage per day -) _____ days

Are there any things you know about that may slow you down?

Are there any things which may speed you up?

Add or subtract a reasonable amount of time to allow for these factors: (if you know any)

What direction? _____ days

Instructions for 'ship': _____

Voyage Plan:

Position: _____ lat _____ long _____

Destination: _____ lat _____ long _____

Distance: _____ nautical miles

Time allowed: _____ days

Slower because: _____

Faster because: _____

Adjusted time allowed: _____ days

Direction: _____

Ship's Instructions: _____



Note here any uncharted lands, islands, reefs, and shoals that you discover.

[illegible]

Purchasers may photocopy, this page for classroom purposes

Provisions Checklist

*use this to keep track of your food and water –
so you don't run out.*

1768 CALENDAR

JANUARY							FEBRUARY							MARCH							APRIL						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
31					1	2	1	2	3	4	5	6		1	2	3	4	5							1	2	
3	4	5	6	7	8	9	7	8	9	10	11	12	13	6	7	8	9	10	11	12	3	4	5	6	7	8	9
10	11	12	13	14	15	16	14	15	16	17	18	19	20	13	14	15	16	17	18	19	10	11	12	13	14	15	16
17	18	19	20	21	22	23	21	22	23	24	25	26	27	20	21	22	23	24	25	26	17	18	19	20	21	22	23
24	25	26	27	28	29	30	28	29						27	28	29	30	31			24	25	26	27	28	29	30
MAY							JUNE							JULY							AUGUST						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7			1	2	3	4		31				1	2		1	2	3	4	5	6	
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30	28	29	30	31			
SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3	30	31					1		1	2	3	4	5					1	2	3	
4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24
25	26	27	28	29	30		23	24	25	26	27	28	29	27	28	29	30				25	26	27	28	29	30	31

1769 CALENDAR

JANUARY							FEBRUARY							MARCH							APRIL						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7			1	2	3	4				1	2	3	4		30					1	
8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18	9	10	11	12	13	14	15
22	23	24	25	26	27	28	19	20	21	22	23	24	25	19	20	21	22	23	24	25	16	17	18	19	20	21	22
29	30	31					26	27	28					26	27	28	29	30	31		23	24	25	26	27	28	29
MAY							JUNE							JULY							AUGUST						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6				1	2	3			30	31				1				1	2	3	4	5
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
28	29	30	31				25	26	27	28	29	30		23	24	25	26	27	28	29	27	28	29	30	31		
SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2		1	2	3	4	5	6	7		1	2	3	4			31				1	2	
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
24	25	26	27	28	29	30	29	30	31					26	27	28	29	30			24	25	26	27	28	29	30

1770 CALENDAR

JANUARY							FEBRUARY							MARCH							APRIL						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6				1	2	3				1	2	3			1	2	3	4	5	6	7
7	8	9	10	11	12	13	4	5	6	7	8	9	10	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	13	14	15	16	17	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	18	19	20	21	22	23	24	22	23	24	25	26	27	28
28	29	30	31				25	26	27	28				25	26	27	28	29	30	31	29	30					
MAY							JUNE							JULY							AUGUST						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5						1	2		1	2	3	4	5	6	7				1	2	3	4
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31					26	27	28	29	30	31	
SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
30						1		1	2	3	4	5	6				1	2	3		30	31					1
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30		23	24	25	26	27	28	29

1771 CALENDAR

JANUARY							FEBRUARY							MARCH							APRIL						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5						1	2		31				1	2			1	2	3	4	5	6
6	7	8	9	10	11	12	3	4	5	6	7	8	9	3	4	5	6	7	8	9	7	8	9	10	11	12	13
13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16	14	15	16	17	18	19	20
20	21	22	23	24	25	26	17	18	19	20	21	22	23	17	18	19	20	21	22	23	21	22	23	24	25	26	27
27	28	29	30	31			24	25	26	27	28			24	25	26	27	28	29	30	28	29	30				
MAY							JUNE							JULY							AUGUST						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4			30						1		1	2	3	4	5	6				1	2	3	
5	6	7	8	9	10	11	2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
12	13	14	15	16	17	18	9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
19	20	21	22	23	24	25	16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
26	27	28	29	30	31		23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31
SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7		1	2	3	4	5						1	2		1	2	3	4	5	6	7
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
29	30						27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				

Group: _____

Session Number	Starting Point	Ended Up	What Happened In Between

Log Book of H.M. Bark Endeavour

Departed from Plymouth on

*Carrying ninety-four men, eighteen month's
Provisions, and the good wishes of the
nation; charged with a mission of Scientific
Importance, and to Investigate the South
Pacific in the Name of the King.*

Signed by Her Voyagers:



Cook's Endeavour CREW PROFILES

* As detailed profiles were not available for all the crew, some information has been included in the profiles which is interpretative, rather than being from historical records of the time. This information has been underlined.

WHO WERE THEY ALL?

*Of the 94 people who sailed with Endeavour,
only 71 were ACTUAL CREW.*

11 were CIVILIANS:

Banks, and his private employees — (2 artists, a secretary, and 4 servants); Dr. Solander, also a botanist; and Green, the Royal Society Astronomer, and his servant.

12 were MARINES:

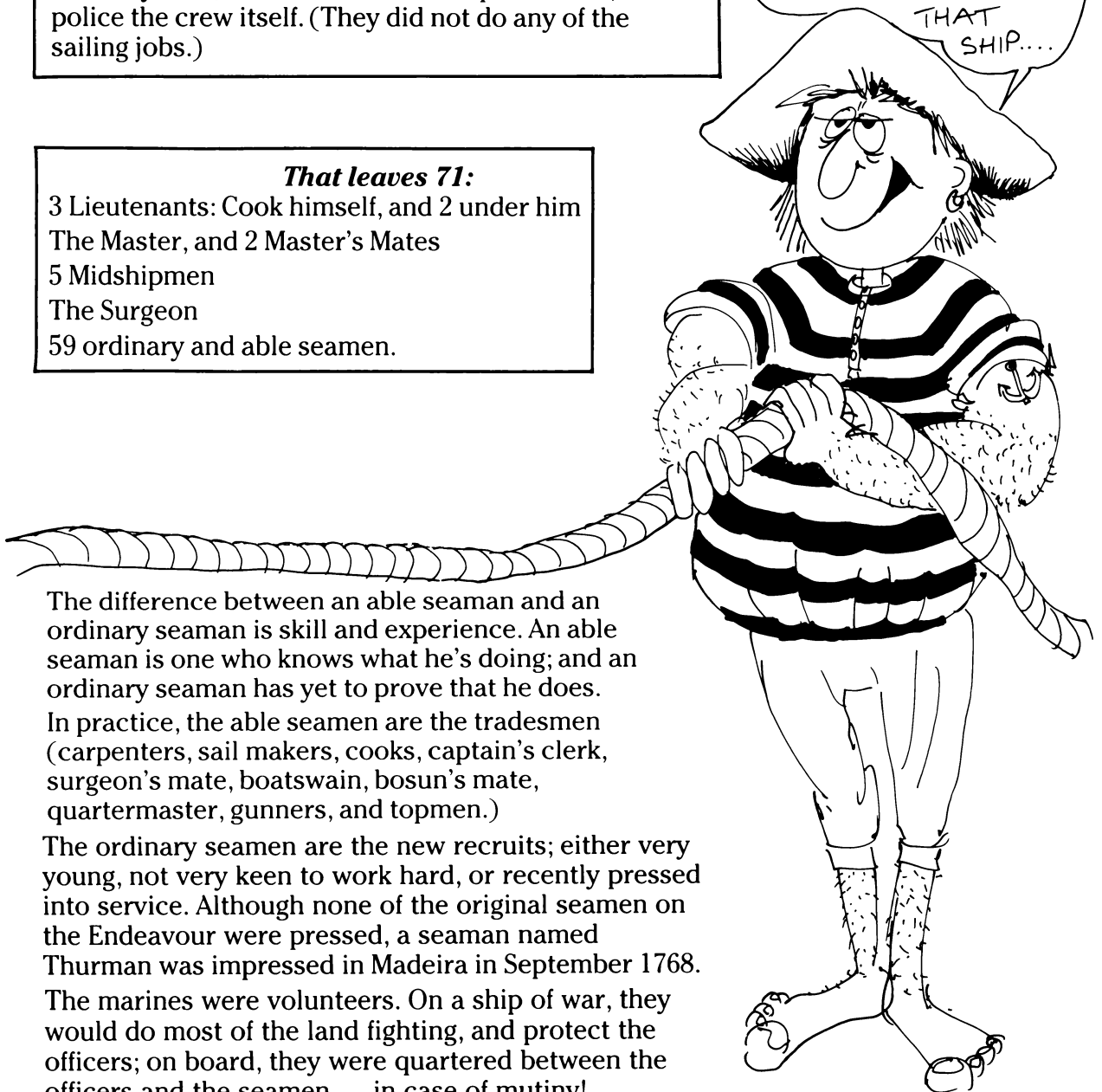
A sergeant, corporal, drummer, and nine privates. They are Navy men, sent to defend the ship and crew, and police the crew itself. (They did not do any of the sailing jobs.)

That leaves 71:

3 Lieutenants: Cook himself, and 2 under him
The Master, and 2 Master's Mates
5 Midshipmen
The Surgeon
59 ordinary and able seamen.

The difference between an able seaman and an ordinary seaman is skill and experience. An able seaman is one who knows what he's doing; and an ordinary seaman has yet to prove that he does. In practice, the able seamen are the tradesmen (carpenters, sail makers, cooks, captain's clerk, surgeon's mate, boatswain, bosun's mate, quartermaster, gunners, and topmen.) The ordinary seamen are the new recruits; either very young, not very keen to work hard, or recently pressed into service. Although none of the original seamen on the Endeavour were pressed, a seaman named Thurman was impressed in Madeira in September 1768. The marines were volunteers. On a ship of war, they would do most of the land fighting, and protect the officers; on board, they were quartered between the officers and the seamen — in case of mutiny!

AAARRGG ME HEARTIES...
.... SOME OF THE STORIES
I COULD TELL YOU
ABOUT THE PEOPLE ON
THAT SHIP....



HOW IMPORTANT WAS THEIR RANK?

The Navy was (and IS) a sea-borne FIGHTING FORCE; the people on board her ships were organised with battle in mind. This meant that her men were divided into 3 DISTINCT GROUPS:

Commissioned Officers

Lieutenants and upwards, with the Midshipmen as Officers in Training.



They lead the expedition, controlling where they go and what they do.

Master, mates, and seamen

They actually SAIL the ship. The Master navigates it to the place he is told by the ship's commander; his mates assist him; and the seamen provide the muscle to do the work.



Ordinary Seamen

Inexperienced, or not very keen (or able) to learn.

Marines

They have two roles to play; as volunteers, and sea-faring soldiers rather than sailors, they defend the ship, conduct any land-offensives, and also police the crew. (Protect the officers, guard sailors being punished by confinement, and make sure nobody takes more than their share of rations.

Able Seamen

The experienced sailors include many with special skills. Experience and ability separate them from the other seamen. They include: **Gunners, Shipwrights** (carpenters), **Sailmakers, Cooks, Topmen, Boatswain, Boatswain's Mate, and Quarter-master.**

HOW DOES THIS WORK, ON "ENDEAVOUR" ...?

The man in charge of the expedition — **James Cook** — was the best surveyor on board and was responsible for most of the chartwork done on the voyage — a job commonly left to the master. He also took over the navigating part of the Master's (Molyneux) job most of the time. He had been Master until he was chosen to command *Endeavour*; and was one of the few people who crossed the line between seamen and officers. Usually, Master was the top of the ladder for someone who began as an ordinary sailor.

Where did the "Scientific Gentlemen" fit in?

Although Banks thought he was in charge of the voyage at the beginning, he quickly learnt that Cook was NOT just the ship's driver, and that the scientific aims of the voyage relied upon the skills of the sailors on board in order to get them to their various destinations. The scientists soon grew to respect Cook's skill as a seaman and also his

skills as a scientist in his own right. They seemed to be quite content to leave command decisions to Cook and his Lieutenants, and get on with classifying and recording their own specimens and observations. Green spent a lot of time instructing the master's mates and midshipmen in the finer points of position fixing by astronomical observations, for instance.

SOME INFORMATION ABOUT CAPTAIN COOK

Although the *Endeavour* men called him “Captain”, because he was in command of the ship, he had only just been made a Lieutenant.

He was the Master on his previous ship, and is one of the **very few** men to rise through the ranks from seaman to a command post.

He was promoted because of his extraordinary skill. If you have read any of the information about navigation, you will already have some idea of how good he was at his job. We remember him as an explorer, but he was more than that. If you get the chance to read about some other explorers, you’ll see what is meant. He was a great sailor, as well as an explorer. He looked after his men. He obeyed orders — he went further than that; he obeyed them and then some. He mapped his routes and discoveries with miraculous accuracy, no matter what the conditions. He was honest, stubborn, brave, cool in a crisis, humane, upright; he earned the respect of all who sailed with him and under him.

He is remembered as much for his successful battles with scurvy as he is for his discoveries. Yet it’s probable that he set the fight back twenty years for everybody else. Although none of his men died of scurvy on this voyage, he thought the main reason for this was the Wort of Malt he had “tested” — in fact it was his attention to their diet, warmth and dryness, fresh air, little rum, and his practice of running 3 watches instead of 2 whenever humanly possible.

He did all these things as a matter of course, being a commander who had once been a seaman, he knew exactly what would make their lives more tolerable, and ran his ship accordingly.

Others did not. Because the Navy kept her officers and men separate from the beginning of their careers, a Captain usually had no idea of the real conditions of his sailors’ lives, day in and day out. He knew what they ate, what they did — he may even have known all their names — but he had never slept in a hammock slung so close to his fellows he could feel four of them breathe. Cook had.

So — when he got back, with no scurvy deaths — he didn’t tell anyone all this. Instead, he wrote a paper recommending Wort of Malt. He must have honestly thought that it had done the trick. And everyone believed it had; it took a long time for the value of lemon juice and oranges to be recognised.

For a Yorkshire farm labourer’s son to reach the heights Cook did, took luck; it also took a remarkable man. I hope you get some idea of him as a person through using this kit.





Joseph Banks

RANK: Civilian — Botanist
AGE: 25
RESPONSIBILITIES: Banks is sent by the Royal Society. As a wealthy “gentleman botanist” he has brought his own gear and will spend his time collecting and taking notes of new discoveries.



Alexander Buchan

RANK: Civilian — Artist
AGE: ≈ 25
RESPONSIBILITIES: Paint and sketch the scenes and people they come across, as directed by Banks.

Details: Joseph Banks

Physical: Handsome. Medium height and build. Brown hair and eyes.

Character: Charming, enthusiastic; very used to having things his own way.

Background: Wealthy. Father died when Banks was 18; he has been able to do whatever takes his fancy since then. Educated at University, without learning much except Botany, which interests him passionately, partly from truly scientific curiosity and partly to entertain his many friends at home. He is the sort of eccentric gentleman who only existed in this century. Solander, Parkinson, Spöring and Buchan, 4 servants and 2 dogs are here purely because Banks has paid for them and sees them as useful companions. See “What Banks Took” Info. card.

Other: Has a sister (Sarah-Sophia) whom he is very fond of; is also engaged, but hopes to evade that.

Details: Alexander Buchan

Physical: Epileptic. Tall and thin, with quick nervous movements.

Character: Kind, good company; talented; keen sense of humour, intelligent, observant.

Background: Has an established reputation as a portrait and landscape painter. It is highly unlikely that Banks knew of Buchan’s epilepsy. Perhaps Buchan himself did not realise how the stress of a voyage like this would affect him. No medication, or understanding of his condition, was available to him. The voyage must have seemed an excellent opportunity to paint things nobody had painted before; and his reputation would have to benefit, as long as his health could stand the strain. And of course, Banks’ was paying him a steady income. He had a sister and widowed mother to support.

Other: Single; no time for romance — nor the money, as yet, in his mind. He died in Tahiti 17/4/1769.



Charles Clerke

RANK: Midshipman/Masters mate
AGE: 25
RESPONSIBILITIES: As senior midshipman is watch commander, navigator-in-training and responsible for overseeing crew.



James Cook

RANK: Lieutenant Captain of Endeavour
AGE: 39
RESPONSIBILITIES: Total responsibility for the success, survival, decisions, and recording of the voyage.

Details: Charles Clerke

Physical: Tall, athletic, very handsome; dark, long-nosed, often smiling.

Character: Always cheerful; adventurous, brave, good at maths, observant, interested, reliable, generous.

Background: A farmer's son, Clerke joined the Navy as a 12-year-old Captain's Servant (cabin boy). So he has got to the post of Midshipman by sheer willpower and brains. He is the sort of person who keeps everyone's spirits up, by being so full of life himself. (Another sailor in love with the sea!) Is an excellent shot; ripe for further promotion, and knows it. He has had to learn everything the hard way, but this has made him strong; instead of giving up, he's tried harder. The men like and respect him; the younger midshipmen have a good model to follow.

Other: Single, but several ladies and his parents will miss him a lot.

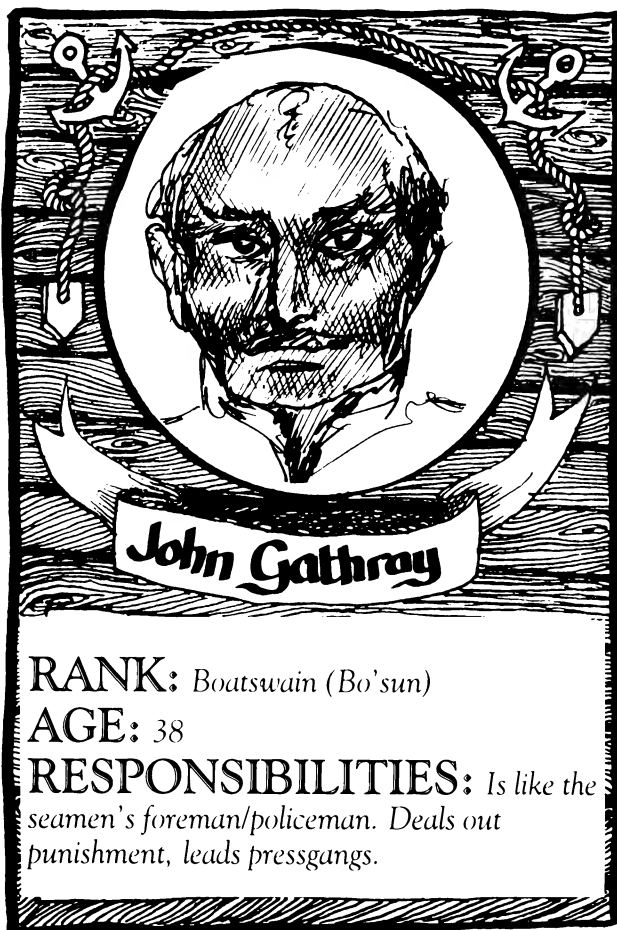
Details: James Cook

Physical: Very tall and well built; piercing grey eyes, big nose.

Character: Determined; courageous; hard-working, strong willed, highly intelligent.

Background: Son of a farm labourer, he was outstanding enough as a child for the squire to pay for some schooling. Apprenticed to a draper in a sea-side town as a boy, he made up his mind to go to sea at 17. At 24 he was made Mate of a coal collier; at 27 he was offered command. He refused, resigned and joined the Navy. Ambitious, he realised that the Navy would be able to use him well. He enlisted as an able seaman and in one month he was Master's Mate, in 2 years Master. He fought the French in Canada, spent 9 years charting the Newfoundland and Canadian Coasts. Had never been south of the equator before this voyage.

Other: Married and devoted to his wife Elizabeth. 3 children.



Details: John Gathray

Physical: Huge — built like a bear. Most of his teeth are missing (from scurvy and fights).

Character: Hard and tough. Expects no sympathy from anyone and gives none.

Background: Was pressed into the navy as an option to prison after killing a man in a brawl. His size and strength make him a good boatswain, because you'd have to be crazy to disobey him. He enjoys the power the navy gives him; that's why he stays. He can't read or write, so he will never get any further than he is in the ranks. He has been on many long voyages before, but not into the Pacific. Where he goes doesn't matter at all to him as long as he gets his salt beef, biscuit and extra rum ration.

Other: Married, 2 surviving children (both daughters). He hasn't seen them for 6 years. They think he's probably dead, and aren't worried.

Details: Francis Gibson

Physical: Short and wiry, curly hair, ready grin.

Character: Friendly, but thoughtless; a bit feather-brained.

Background: Orphaned at 12, he looked after himself (by thieving, mostly) in the streets of London before he was recruited into the army at 16. At least he gets fed fairly regularly, clothed and housed. He has been married, but his wife died in childbirth just before the voyage. He is pretty upset about this, mostly because once again he has no family but the army. He is adventurous enough to be excited about going, though; unlike most of the marines, his imagination has worked overtime in picturing what it's going to be like. He has no real idea at all!

Other: Can't read or write.



John Gore

RANK: Lieutenant. Third in Command
AGE: 37
RESPONSIBILITIES: Basic good running of the ship; rosters; discipline; provisions; navigation.



Charles Green

RANK: Civilian — Astronomer
AGE: 33
RESPONSIBILITIES: Sent by the Royal Society to observe the transit of Venus in Tahiti.

Details: John Gore

Physical: Well-built, strong, athletic.

Character: Lots of sense, not much imagination. Sportsman, excellent officer, eager to explore anywhere.

Background: American, originally. Has been at sea for 13 years, beginning as a midshipman. Was with Wallis on the "Dolphin", so has been to Tahiti already; had 4 weeks shore leave between that 2 year voyage and this one. His sturdy, reliable personality is the kind that makes the ship work really well. No nonsense, no misunderstandings. Is married and has 5 surviving children — 2 in America somewhere, and 3 in Plymouth. (Think about it!)

Other: His English wife's name is Mary.

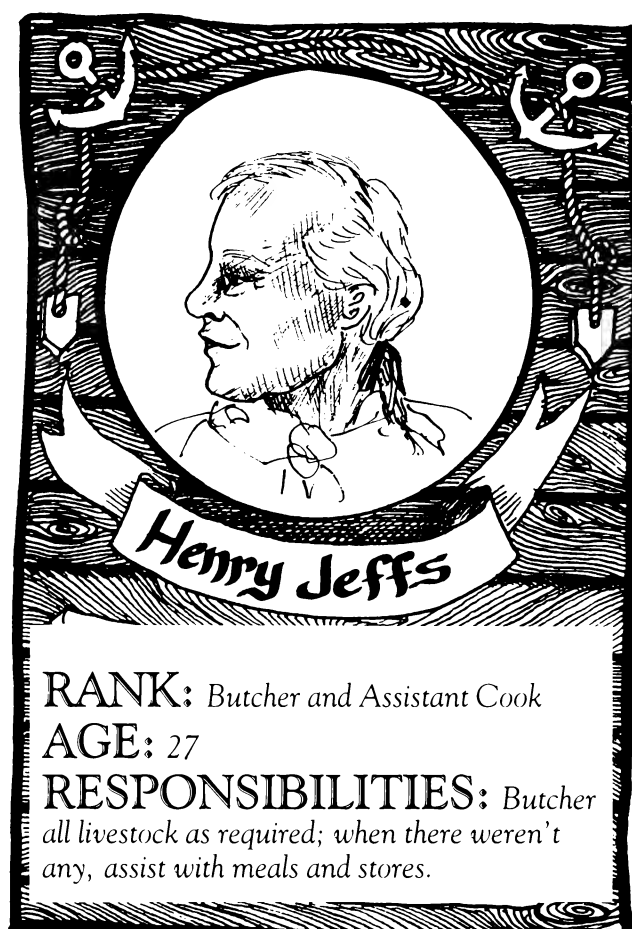
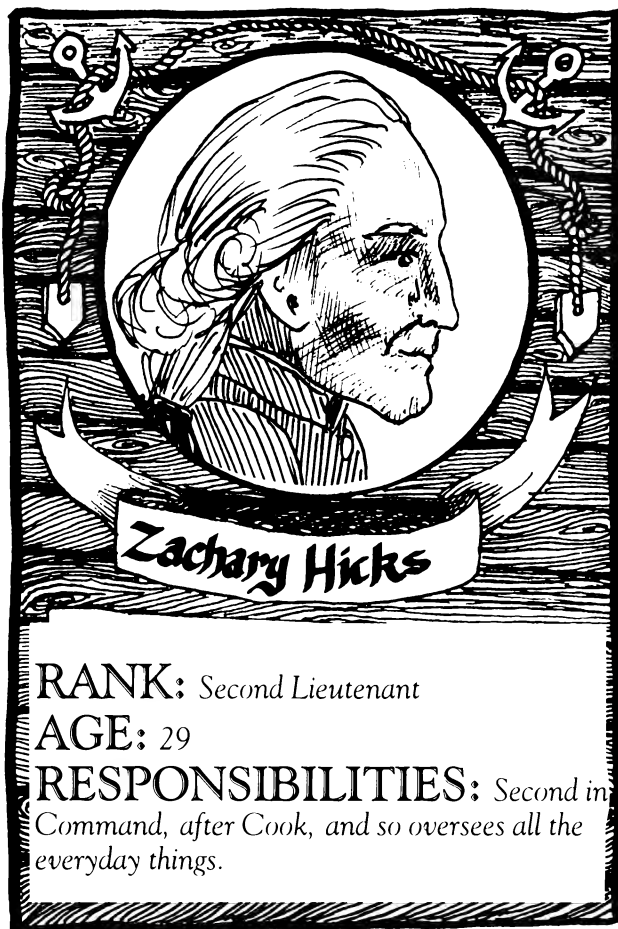
Details: Charles Green

Physical: Dark, small and slight.

Character: A perfectionist. Very quiet; keeps to himself. Isn't used to socialising.

Background: Another farmer's son, if a slightly wealthier one than Cook's and Clerke's; he is an accomplished astronomer (otherwise the Society wouldn't have picked him) and a good teacher; the midshipmen will learn a lot from him. He is married with 2 children, and his mother-in-law lives with them too. His family definitely come after his work. Astronomy is, in 1768, an exacting mathematical science. He suffers a lot of eyestrain from looking and measuring as much as he does.

Other: —



Details: Zachary Hicks

Physical: Medium height and build. Very thin. Has tuberculosis.

Character: Sensible, honest, fair; a good officer and experienced sailor.

Background: Born in London, he joined the Navy at 20, as a midshipman, and was promoted due to his ability at sea, both in navigating and commanding men. He was possibly press-ganged into service; being able to read and write made him a cut above the ordinary seamen, so he could have been made midshipman just because of that. The Navy is his career, now. His tuberculosis is not noticeable at the start of the voyage; he wouldn't have known that he had it. Well liked and respected by the men on board, due to his considerate but stern treatment of them.

Other: Married, two children. His wife is unhappy about this voyage; she knows he is not 100% fit.

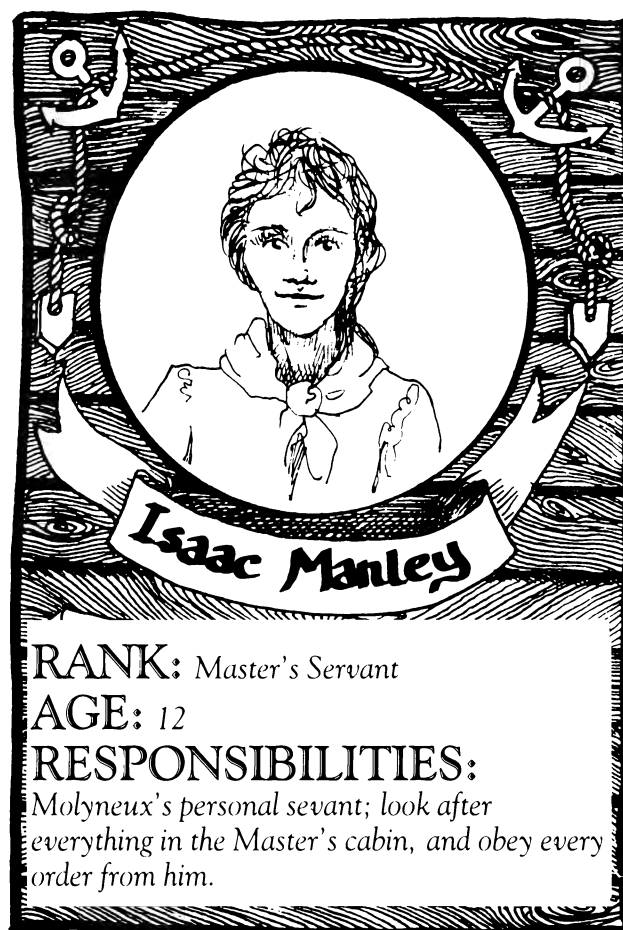
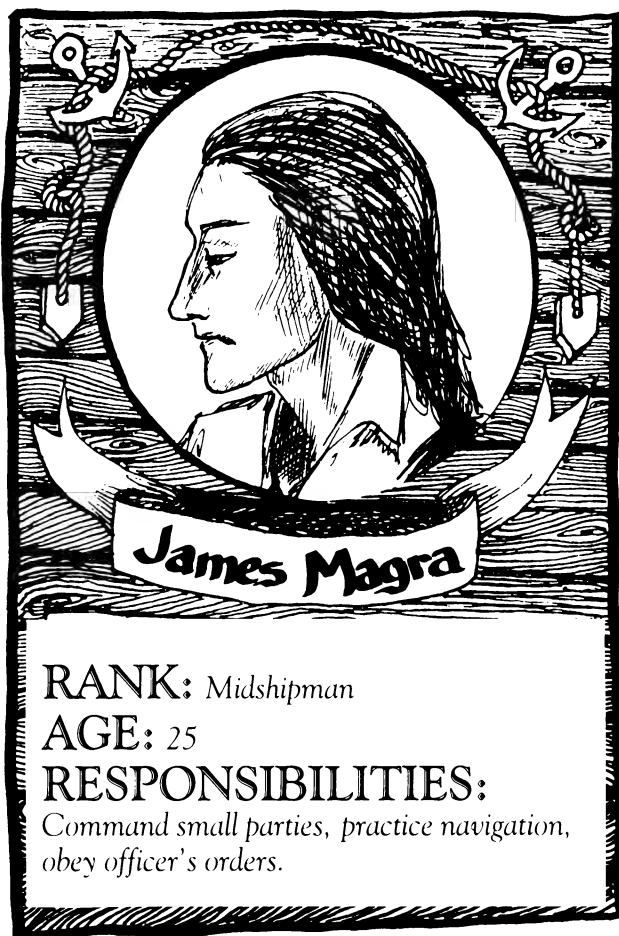
Details: Henry Jeffs

Physical: Medium height, heavy build. Balding, several teeth missing.

Character: Loud, crude, often causes trouble because of his temper. Drinks a bit too much.

Background: Born in London, he was "apprenticed" to a butcher at 10 by his father; really more like slave labour (his father owed the butcher money, gambling). He had a hard life from the start. Pressganged at 25, he actually likes the life, which goes to show how bad his on shore one must have been. He has lost touch with his family completely, and this worries him a little as he has a younger sister whom he is fond of. They had moved when he returned for the first time after 3 years at sea, and there is no way he can trace them. Is an expert carver of wood, bone, and anything else he can get hold of.

Other: Single.



Details: James Magra

Physical: No teeth (rotted in his youth), bad eyesight.

Character: Thought a lot of himself, although he shouldn't have; always in debt.

Background: Born in New York, 1746. His father was a wealthy doctor. Joined the Navy at 14 as a Captain's Servant. He has been on 5 ships before this one, as Captain's servant, and midshipman. (Occasionally listed as an Able Seaman, but that meant only that there were enough midshipmen on board before him; he still was a midshipman and training to be an officer. He went to boarding school in England; his father's influence got him a berth at sea. You had to have 6 years at sea before sitting for the Lieutenant's Exams; probably young James wasn't doing very well at school, so at 14 his father set him off to make something of himself.

Other: Single.

Details: Isaac Manley

Physical: Small, quick, dark. Thin, and has very bad teeth.

Character: Determined, obedient, intelligent. Keen to learn everything he can.

Background: Can read and write, and loves the sea in spite of everything. He is ambitious, and realises that he is young enough and clever enough to really get somewhere in a Navy that is desperately short of capable sailors. (He ends up, eventually, as an Admiral; the last surviving member of Endeavour's crew). Family are poor but hardworking people; his father is chief assistant in a ship's chandlers shop, so the sea is probably in his blood. Six brothers and sisters.

Other: Was promoted to midshipman on the 5/2/1771.



Robert Molyneux

RANK: Master
AGE: 24
RESPONSIBILITIES: Senior officer, with lots of Navigating skills, he is mostly concerned with sailing correct courses and working them out.



Jonathan Monkhouse

RANK: Midshipman
AGE: 19
RESPONSIBILITIES: As an "apprentice officer", he is expected to command small groups, learn navigational theory and practice.

Details: Robert Molyneux

Physical: Thin; medium height; very fair skin and hair (has to watch it in the sun).

Character: Intelligent, capable, but has a drinking problem.

Background: Another "Dolphin" man, also with 3-4 weeks leave between that Tahiti voyage and this; can draw a chart well, and is a fine officer and navigator as long as he is sober. He drinks to "drown his sorrows"; as he is a very quiet, withdrawn person, it's hard to tell what they are. His wife left him for a more constant companion, before the "Dolphin" voyage; perhaps that's part of it. He doesn't confide in anyone on board about it.

Other: —

Details: Jonathan Monkhouse

Physical: Medium height, wiry build. Dark hair and eyes.

Character: Intelligent, excellent memory, capable, reliable and brave.

Background: Has been at sea as a midshipman (volunteer) for 3 years; has nearly been wrecked once, sailed all over the North Atlantic, but (like Cook) has never been south of the Equator before. The surgeon is his older brother. He is much trusted by Cook and is the most responsible of the midshipmen. Jonathan worries a lot about William; he knows his brother is not a happy man; and wishes he could help him somehow. It's hard when you are 11 years younger, and William treats him like a child; or like a stranger, which is worse.

Other: Single, but in love with the local vicar's daughter. She approves, but her father . . .



William Monkhouse

RANK: Surgeon
AGE: 30
RESPONSIBILITIES: Keep everyone as healthy as possible; get them better if they aren't.



Charles Orton

RANK: Captain's Clerk
AGE: 28
RESPONSIBILITIES: Re-write and draw all ship's charts and records as surveyed by Cook.

Details: William Monkhouse

Physical: Medium height; thin; going bald. Has attacks of alcoholism.

Character: Literate, educated; reasonably good at his job. Nervous type.

Background: Has been a naval surgeon for 5 years; this is the first time he has sailed on the same ship as his brother Jonathan (a midshipman, 11 years younger). Another one who unfortunately has alcoholic bouts. Was married; his wife died in childbirth. It was after that that he went to sea. His son survived, but William rarely sees him; he is cared for by his wife's sister. His medical qualifications are questionable, but his intelligent treatments usually do more good than harm.

Other: —

Details: Charles Orton

Physical: Short; overweight at start of voyage. Squints.

Character: Mean; snobbish with crew. Disliked so often that he expects it.

Background: This is his first voyage anywhere, and he hates the sea. Although he has had an education, good family to love him, and lots of advantages compared to many on board, he always manages to feel he is being done out of something he deserves. He is a terrible pessimist, gets seasick often, and drinks himself into unconsciousness far too frequently. He is unpleasant to everybody most of the time, so has no friends on board, or on shore either for that matter. On Endeavour's return, somebody sold their story to the papers before they were supposed to be. Probably O.

Other: —



Sidney Parkinson

RANK: Civilian — Artist
AGE: 25
RESPONSIBILITIES: To make studies of the plants (and animals) that Banks requires.



William Perry

RANK: Surgeon's Mate
AGE: 23
RESPONSIBILITIES: Assist Monkhouse in all medical duties, and learn as much as he can.

Details: Sidney Parkinson

Physical: Small and slight. Long nose, "prim little mouth". Dark hair and eyes.

Character: Sensitive, sensible, serious. Very good at his job. High moral standards.

Background: Quaker, which explains his strength of character, and firm religious and ethical beliefs. Son of a draper. Banks saw his drawings of flowers in London, and realised this man would be very useful indeed, so persuaded Parkinson to come. He had quite a reputation as a botanical draughtsman already, and his work on this voyage is easily seen — most books on Cook use Parkinson paintings to illustrate what went on. Loves his work, and sees the trip as an excellent opportunity to see and do new things.

Other: Single. Devoted to his family, who worry about him a lot.

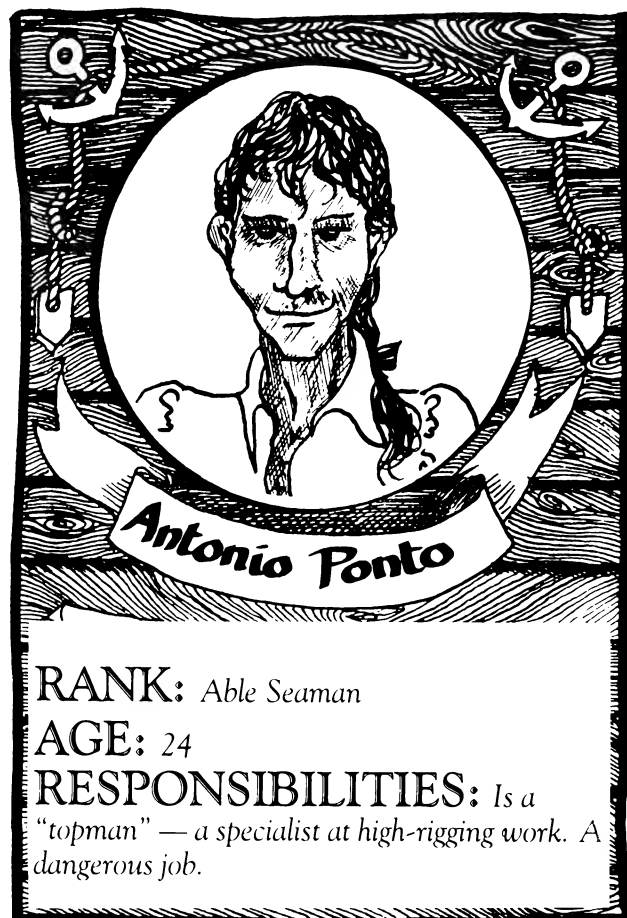
Details: William Perry

Physical: Small but strong; short-sighted. (Wears glasses.)

Character: Excellent surgeon's assistant. Gentle, sympathetic, kind, generous.

Background: Is one of those rare people who are just born with skilled hands and know how to help the sick and injured. He joined the navy specifically to learn more about doctoring. Seventh son of a poor family, he taught himself to read at 19, and has been at sea since he was 21. Full of common sense and learning from everything, Perry is a very valuable man to have on board. He has sent most of his small pay home to his parents all his working life; he writes them letters that the vicar reads for them. They are very proud of their son.

Other: He succeeded the surgeon 6/11/70 and was highly thought of by Cook. Single, but engaged to his childhood sweetheart.



Details: Richard Pickersgill

Physical: Tall and thin; fair hair.

Character: Able, friendly, romantic; a bit oversensitive. Worked well with Cook.

Background: Yorkshireman. Another ex-"Dolphin" man, also only a few weeks leave between trips. Probably a volunteer, as he can read and write and has ambitions to become a Captain. Drinks too much occasionally. Is a good junior officer type. Married the girl who had waited 2 years for him as soon as he got off the "Dolphin". 4 weeks together isn't very long, and he finds it hard to bear at first. (So does she.)

Other: He became Master after Molyneux died 16/4/1771.

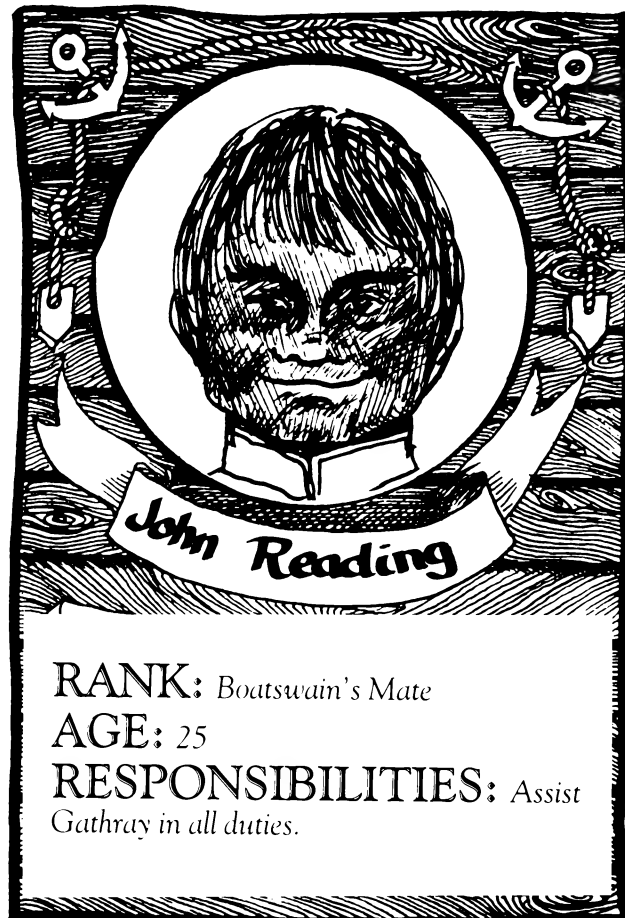
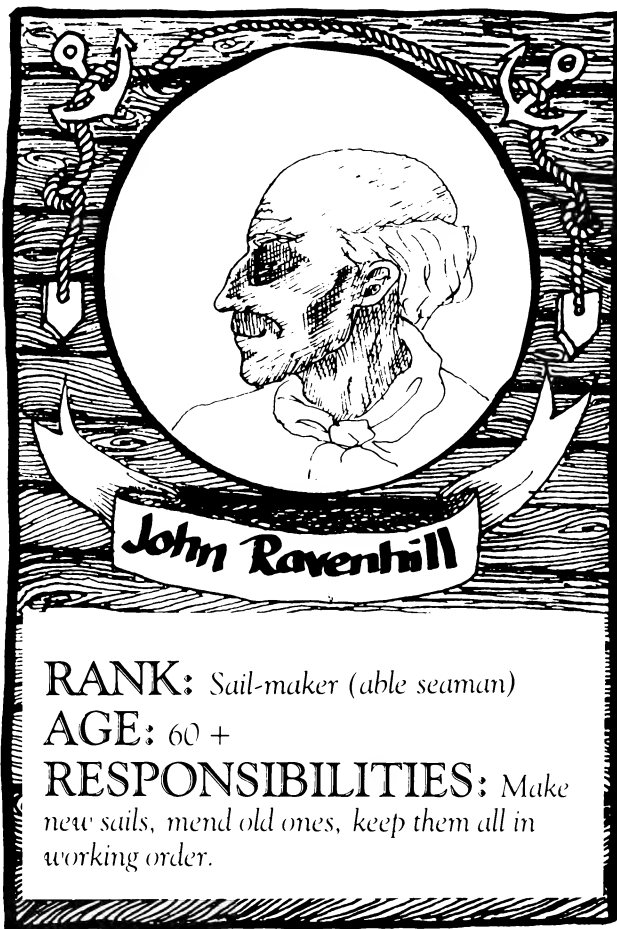
Details: Antonio Ponto

Physical: Short, stringy; incredibly agile. 2 earrings, both earned round the Horn

Character: Lies, cheats and is charming. Generous, sympathetic and full of mischief.

Background: Born in Venice, into a circus family. He learnt his acrobatic skills there. His whole family (and the circus) were wiped out in a typhoid epidemic, in France, when he was 12. All alone, he joined a merchantman (to save himself from starving) and has been at sea ever since. He was pressganged for this voyage, but takes it as fate. Because of his skill and experience, he does not find navy life as hard as some, who aren't as well-equipped to cope with it.

Other: His English is limited to sailor's slang. He is single, but has several girls in every port.



Details: John Ravenhill

Physical: Thin, but wiry. Has two teeth left. Is the oldest crewman by far.

Character: Hardworking and sensible, as long as that's necessary. Drinks continually.

Background: A tailor who could get so little work he was literally starving, he was pressed on the streets of London (drunk) thirty years ago. His skills made him an instant sailmaker; he sees it as better on board than his life on land, so he stays on. His thirty years at sea make him the "old man" of the crew; he has a special position with the men, mostly due to his skill at storytelling, and the vast experience he has of men and ships. He's well liked by all of them.

Other: His fiancée of thirty years ago is still waiting for him; he has never been back to find that out.

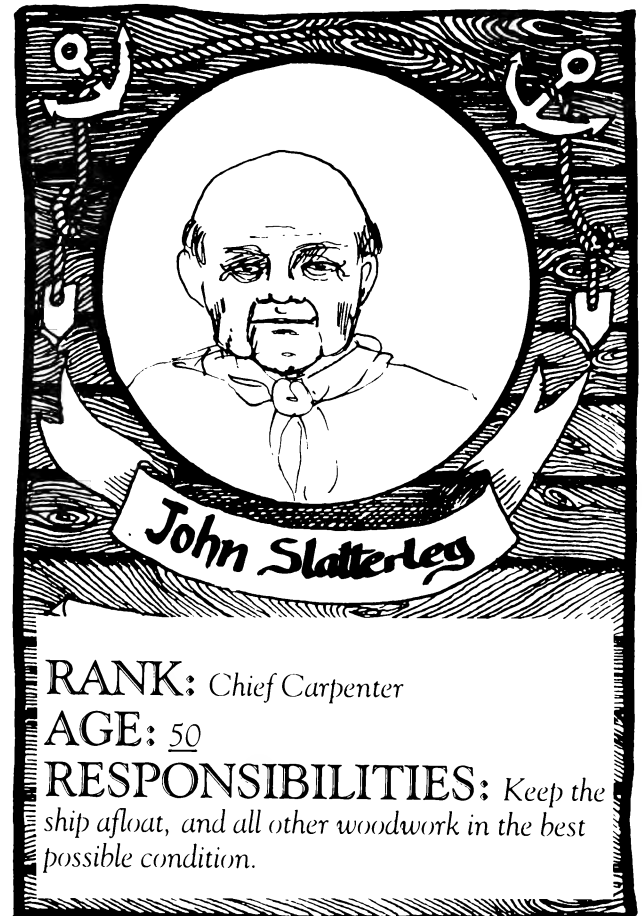
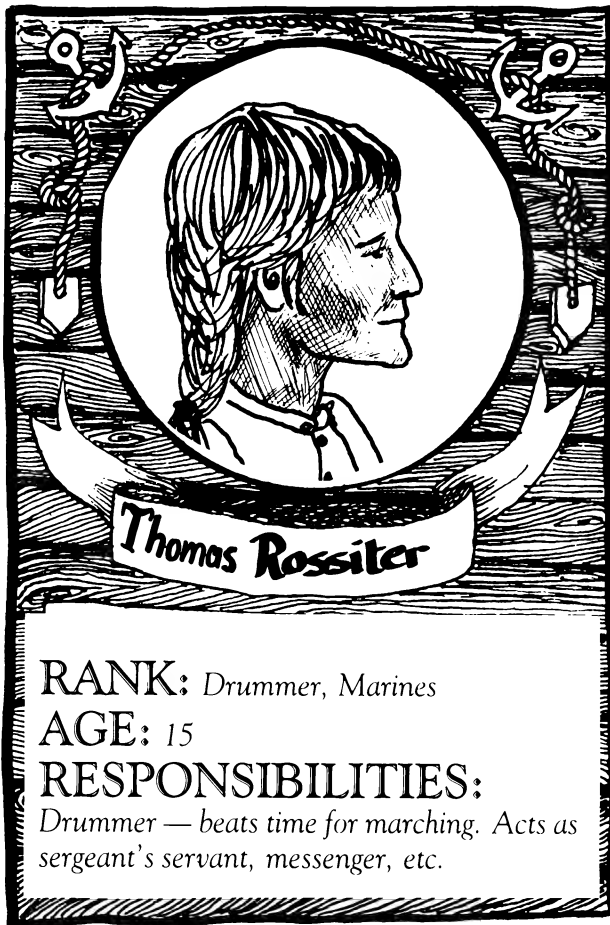
Details: John Reading

Physical: Short, stocky, very strong. Lisps, but talks so rarely few know this.

Character: Slow, honest, quiet. Gives the impression of being simple, but isn't.

Background: Pressganged seven years ago when he was too drunk to notice, he probably stays in the navy because it at least gives him a job and somewhere to go. He was a casual farm worker before the navy, which is a very hard life. The dreadful conditions on board may well be better than what he was used to. Frequently little more than a beggar, owning nothing but the clothes he stood up in; no family surviving, no regular work, and one of thousands in the same position — you can see why.

Other: Single. The girl he hoped to marry is now the wife of someone else.



Details: *Thomas Rossiter*

Physical: Tall, but very thin, dark.

Character: Rash, romantic, no patience, but friendly and helpful; interested in everything.

Background: A foundling — a baby left on the steps of a merchant's house — Peter grew up in the servant's quarters and was sent into the army (as a drummer because he was too young to be anything else) by the merchant as a seemingly fair way of getting rid of a boy he didn't know what else to do with. Rossiter has all sorts of fantasies about who his real parents are, and he is intelligent enough to make something of himself, as long as he learns to think first before he does things.

Other: Single, and very much alone in the world.

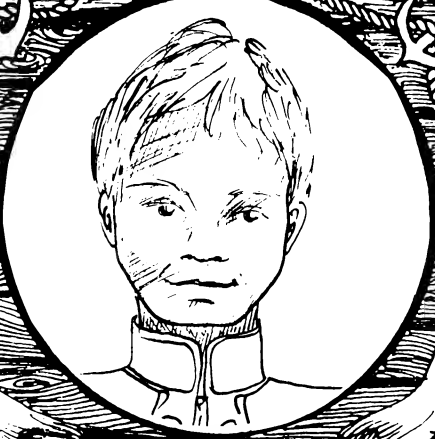
Details: *John Satterley*

Physical: Short, stout, bald; looks older than 50.

Character: Excellent craftsman, fond of rum, fighting, and women in that order.

Background: Went to sea as a carpenter in his twenties to escape from a woman he had proposed to. The sailor's life suits his rough and ready nature, and he treats each ship as most men treat their wives (if they love them!) so he gets a lot of pleasure out of his work. He is the kind of man most sailors then are supposed to be — rollicking, careless, misfits on land. Endeavour is lucky to have one so careful of her in charge of her survival. Although Henry is very fond of rum, he does not have the trouble with it so many of his fellows do. He chews tobacco, too.

Other: —



Isaac Smith

RANK: Midshipman
AGE: 16
RESPONSIBILITIES: "Apprentice" officer. Commands small groups; oversees a watch; learns navigation.



Daniel Solander

RANK: Civilian — Botanist
AGE: 35
RESPONSIBILITIES: Collect and classify as many new plants as possible; keep Banks' company.

Details: Isaac Smith

Physical: Small for his age, but growing fast. (Problems with uniform due to this.) Dark.

Character: Nervous, eager to please; has to study hard to keep up.

Background: He is Mrs. Cook's cousin, and his family have high hopes of him doing well under Cook on this voyage. He is still very much a boy among men and is too hard on himself most of the time. The crew make life difficult for him by not obeying him as instantly as they do everyone else; he will get over this as he gains experience. He finds the maths involved in navigation very difficult and often spends all his watch-below (time off) struggling to learn it. Clerke helps him a lot.

Other: Writes often to his mother and sister. Was an able seaman till May 1770 and midshipman till May 1771 when he became Master's Mate.

Details: Daniel Solander

Physical: Short; inclined to be stout. Fair. Always well groomed.

Character: Brilliant, friendly, vast knowledge of Botany. Cheerful, modest — good company.

Background: A favourite pupil of Linnaeus (the founder of botanical classification) he is called Doctor by everyone (an honorary title). He is Swedish and was sent to London to spread Linnaeus's theories. Accepted immediately in society because of his plentiful good qualities, he was an assistant in the British Museum and a fellow of the Royal Society. Banks' description of the expedition made him decide then and there that he wanted to go too; Banks was overjoyed at the idea, of course.

Other: Single, but definitely enjoys female company.



Details: Herman Spöring

Physical: Short, stocky; very deliberate in his movements.

Character: Very serious, conscientious, thorough and capable. Knows a bit about nearly everything.

Background: Also Swedish. Son of a Professor of medicine. He has had some surgical training; been a watchmaker for 11 years; then he became Solander's clerk, so has plenty of botanical and scientific experience himself. He must be very useful. A quiet, studious, and modest man, he keeps to himself and his work. Possibly he is the kind of man who likes to bury himself in a new field, and learn all about it, then move on to something fresh and challenging.

Other: Single. Shy of women, in general. No surviving family.

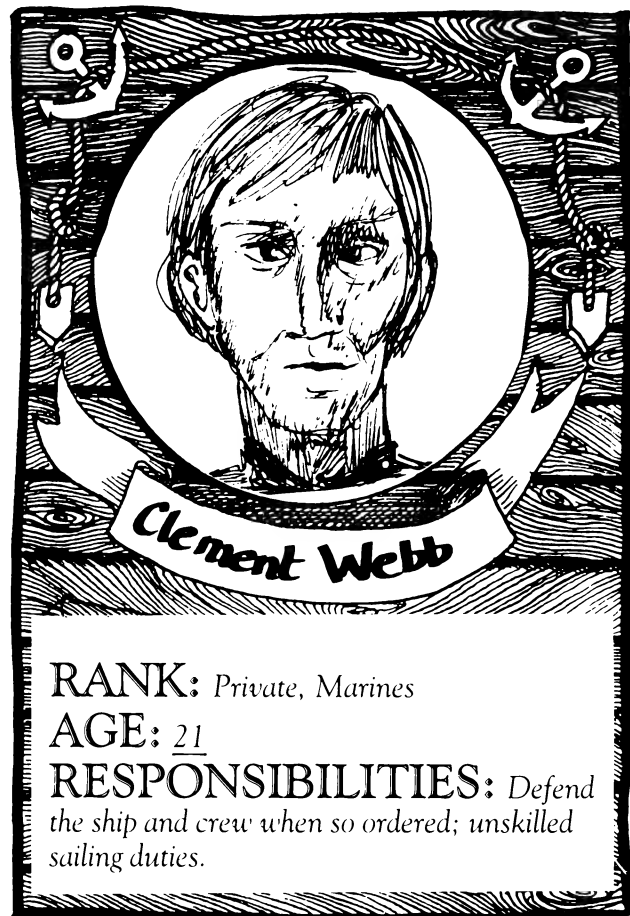
Details: John Thompson

Physical: Right hand missing (blown off fighting the French). Stout, medium height.

Character: Bad-tempered; usually finds something to be miserable about.

Background: Pressganged at 18, he has been on several long voyages before. He feels he should have been pensioned off after losing his hand, and is constantly complaining about the rotten Navy. (He probably stays just so's he can still carry on about it!) He is another who really has nowhere else to call home, now. The crew actually quite like him; his grouchy way is so consistent that they'd be surprised if he said a kind word to anybody.

Other: Single. No parents living, nor brothers/sisters.



Details: John Truslove

Physical: Medium height and build, fair haired, very fit and strong.

Character: Cheerful, friendly, generous, considerate, sympathetic.

Background: Orphaned at 8, and brought up by an adoring aunt until she died too, leaving him £200 and an educated mind. The money (a lot in 1760's) was stolen by a highwayman. It was all he had in the world. So he joined the army. That was two years ago, and he's already a corporal. Respected for his fairness and concern by his men, he does a lot to break down the dislike of the marines for the navy men, and vice versa, just by being what he is — a good bloke.

Other: Single.

Details: Clement Webb

Physical: Tall, well built, good looking. Gets horribly seasick.

Character: A dreamer. Brave, if silly sometimes; over-romantic.

Background: Can read and write. Only son of a weaver's family, he joined the army on the spur of the moment to get away from the dullness of his former life. Sometimes he regrets this, but this voyage promises his dreamer's mind all sorts of excitement and glory, so he's quite happy at the moment — in spite of the crowding, food and sea-sickness. His father hasn't spoken to him for 4 years (since he joined up) because he thinks his son is crazy.

Other: Single.

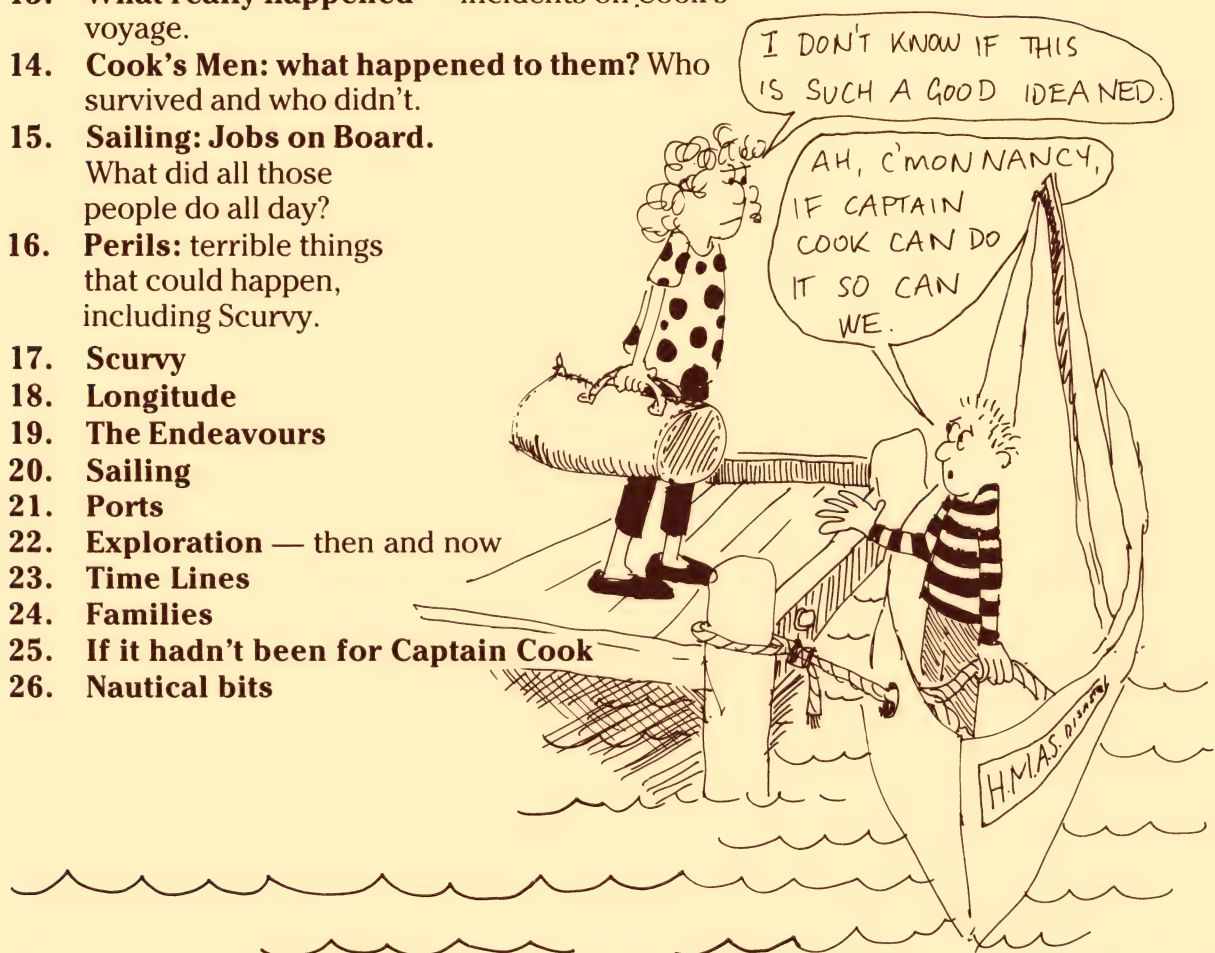
Rank:
Age:
Responsibilities:

Rank:
Age:
Responsibilities:

Cook's Endeavour

INFORMATION CARDS

1. **England in 1768.** General Outline.
2. **The Ship.** Plan of H.M. Bark Endeavour, measurements and information.
3. **Food.** What there is to choose from, and what Cook took.
4. **The Known World.**
5. **Your Orders.** A simplified version.
6. **Transit of Venus.** Why? What? How? and When?
7. **Other Things to Take.** Ship's Gear and Banks' luggage.
8. **Places You Can Go.** For people in trouble.
9. **Places You are Supposed to Go: Tahiti.** brief notes.
10. **Places You are Supposed to Go: New Zealand.** brief notes.
11. **Australia: What Cook Found.**
12. **Cook's Voyage: Where did he go?**
13. **What really happened** — incidents on Cook's voyage.
14. **Cook's Men: what happened to them?** Who survived and who didn't.
15. **Sailing: Jobs on Board.** What did all those people do all day?
16. **Perils:** terrible things that could happen, including Scurvy.
17. **Scurvy**
18. **Longitude**
19. **The Endeavours**
20. **Sailing**
21. **Ports**
22. **Exploration** — then and now
23. **Time Lines**
24. **Families**
25. **If it hadn't been for Captain Cook**
26. **Nautical bits**



ENGLAND IN 1768

GENERAL CONDITIONS

The Industrial Revolution is about to begin. There are a few water-powered cloth factories, but other than those looms and spinning “machines”, there are no mechanical industries yet. This means everything is done by man-power, and thousands of the jobs available in the future don’t exist yet.

The population has grown rapidly, to between 12 and 15 million; more than $\frac{1}{4}$ of the adults have no job. This means no money. The very poor can get help from their local parish, as long as they live in one. Wanderers looking for work are not welcome. Millions live a life of hunger, hardship, overcrowding, illness, crime, and misery. In London, half the children die before they are two. In the whole country, $\frac{1}{3}$ do, and that’s not counting the ones who don’t live for 4 weeks (they are not even recorded).

If you are born rich, you are lucky. If you are born poor, you will almost certainly die poor. There are a few people — shopkeepers, mostly — who aren’t rich, but can afford things like coal to keep them warm in winter, meat every day, and more than two sets of clothes. The rest — millions of people — live a life you will find it hard to imagine. (A close parallel in your time can be found in Third World countries. If you think of all the things people do for a living in the twentieth century, and cross off all the ones that involve powered machines, you’ll see it better.) The land has provided most of the food, and most of the jobs, for centuries. Now there are just too many people for the same old space, and it’s not working.

WHAT YOU’D MISS

- streetlights
- aluminium
- fountain pens
- big shops
- dental fillings
- bicycles
- traffic signals
- bitumen roads
- powerlines
- anaesthetics
- electricity
- refrigeration
- canned food
- cheap crockery
- clean streets
- glass in every window
- disinfectant
- anti-biotics
- an organised police force
- press-studs
- synthetic fabrics
- detergent
- plumbing
- clean water
- knowing what’s happening in other places while it’s still happening
- literacy being a right, rather than a privilege
- the expectation that all your brothers and sisters will live as long as you will
- heated houses and warm clothes in winter
- showers, hot water out of a tap
- washing yourself every day
- people who’ve got all their teeth, clear skin, healthy hair, and who don’t smell.
- zips
- steel
- rubber
- gas
- pencils
- plastic
- cars
- trains
- trams
- washing machines
- sewing machines

EDUCATION

You have to buy it. If you can’t, you don’t go to school. If you can find the money, and learn to read and write, then you will be able to find work more easily — in shops, as a clerk, secretary, bank teller, etc. The rich (like Bankers) can buy all sorts of education, right up to university level. Cook went to elementary school in his local village; without that he wouldn’t have made it, most probably.

FOOD

see “Food” card.

FOREIGN AFFAIRS:

1. At war with France (over possession of Canada) until 1763. The French are therefore not friendly.
2. The American Colonies are rebelling; the “Boston Tea-Party” has happened, and it looks like a full scale War of Independence is going to break out.
3. SPAIN is almost an ancestral enemy. Things have been unfriendly since Henry VIII split from the Catholic Church, two hundred years ago. The main reason for wanting Cook to explore the South Pacific was to get a foothold there for England before Spain took the lot.
4. The DUTCH are in direct competition for trade in Africa (slaves, ivory) and Asia (tea, silk, spices, opium). They aren’t true enemies, but aren’t true friends either.
5. The PORTUGUESE are also competing, and in the same places for the same things, but are a little friendlier, because England helped them become independent of Spain a few years ago.

In other words, no powerful nation in Europe will lift a finger to help anyone English, unless there is something in it for them. This includes their colonies too, of course.

HEALTH

Large families often crowd together in tiny houses. It’s common for you to live with grandparents, aunts, uncles and cousins, in a house that may only be ONE ROOM. This happens because that way at least they all have a roof over their heads, and some of the adults will be earning some money, especially at harvesting and planting times when the farmers need extra help. It also means that diseases are impossible to avoid. Not only do all these people use the local rivers to throw all their rubbish into, they also drain their cess-pools (toilets — if you can call them that!) into them, AND WASH IN AND DRINK that same water. So we have plagues of typhoid, cholera, measles, smallpox, influenza, polio, dyptheria, and bronchitis. England is a very cold place in winter; pneumonia kills thousands of people every winter, just because they can’t keep warm and dry, and eat badly. So many babies die that, although mothers often have as many as ten children, they rarely have all of them surviving to adulthood.

Medicine is a cross between science and guesswork, depending on what sort of training (if any) the doctor has had. There are no nurses, and no hospitals as you would know them. Nobody knows anything about germs; and rotten food just has the worst bits of mould scraped off and is eaten anyway.

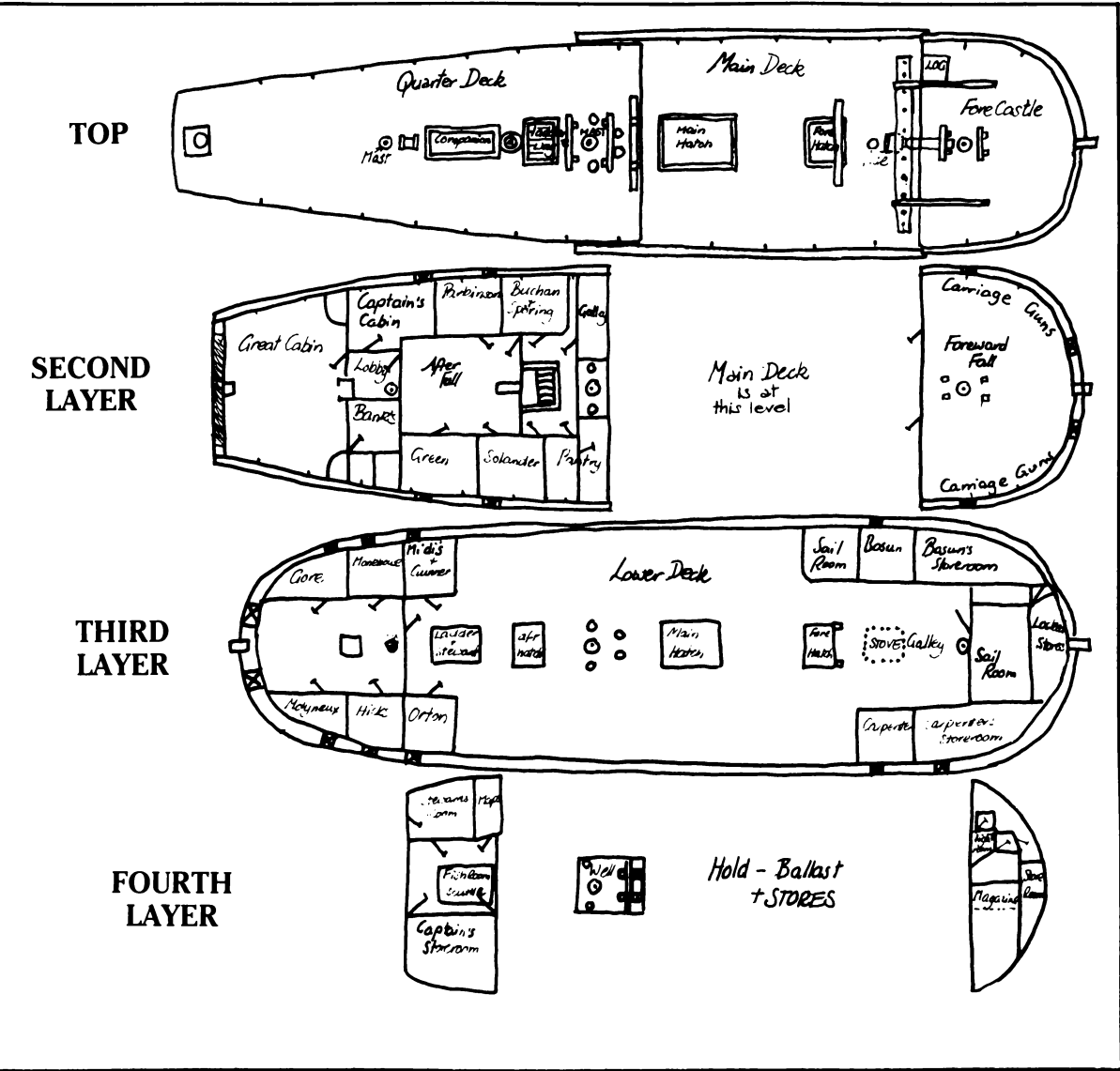
The rich people aren’t crowded or cold or underfed, so they don’t catch as many diseases as the rest of us. But they still drink bad water, and eat bad food, so they aren’t as safe as you’d think.

POLITICS

The country is run by the Parliament and the King (George III). The King has to agree or disagree with whatever Parliament comes up with. He usually agrees. He also has quite a lot of influence on their decisions before they make them. There are two Houses: Lords who inherit their seats, and Commons, who are elected to represent the people. “The people” means men who own land. Nobody else gets to vote.

Because the state of the country is so bad, people get voted in and out rapidly. This makes the governing difficult. There are no political parties, but there are groups with similar interests, who often vote together in Parliament.

- **Length Overall — 32.6 metres**
- **Length, Lower Deck — 30 metres**
- **Width (at widest) — 9 metres**



Masts and Rigging: 3 masts, square rigged.

History: 4 years old; was a coal-ship. That's why she can carry so much.

WHY CONVERT A COAL CARRIER INTO A SHIP FOR EXPLORING IN?

1. Plenty of room for stores.
2. Small, broad of bottom and comparatively shallow draughted so that if repairs are needed far from help she can be beached, mended and floated again by the crew alone.
3. Stable — if she runs aground or faces high seas.
4. If absolutely necessary, she could be sailed (in good weather and favourable winds) by a crew of 12.

AS I WROTE IN MY JOURNAL
"A BETTER SHIP FOR SUCH A
SERVICE I WOULD NEVER
WISH FOR"



ACCOMMODATION

The plan shows you exactly where a few people slept. The rest — and the animals — are an interesting problem for you.

Here are some clues:

- sailors slept in hammocks, hung just far enough apart for them to climb in and out, and they never all slept (on board) at once.
- each one had a "sea-chest" — a lockable box (about the size of a milk crate) to keep everything he owned in.

- a tall person (like Cook, who was over 6 ft) could only stand up straight in the Great Cabin — which was reserved for the Officers and Gentlemen.
- animals were kept out on deck, unless that was too dangerous for them, in pens and crates.*

*dogs and cats excepted, they wandered free to keep the rats down.

WATCHES: HOW THEY WORKED

The watch system was established so that the ship's company could obtain regular periods of rest while the ship was being sailed.

The day was divided into five 4 hour periods and two 2 hour periods of watches. The half watches — the dog watches — were brought in to produce an uneven number of watches so that the sailors did not keep the same watches every day.

The "Three watch" system — usually

implemented in open sea and good weather meant each man was on watch (on deck) for 4 hours followed by 8 hours off watch.

The "Two watch" system — used in bad weather, or dangerous waters (close to land or other things you could sail into) meant 4 hours on and 4 hours off watch. This was to make sure that the men on deck didn't get worn out: 4 hours of battling high seas, wet rigging and heavy sails was long enough.

MEALS

See Food card.

WHAT DID EVERYONE DO?

See Jobs on Board card.

FOOD — WHAT IS THERE?

MANY OF THE THINGS WE EAT
REGULARLY IN TWENTIETH-
CENTURY AUSTRALIA WERE
ALMOST UNKNOWN IN
EIGHTEENTH-CENTURY ENGLAND

BASICS

The diet of MOST people revolved around bread, cheese, porridge, and soupy-stews (of boiled up potato, onions, cabbage and carrots with a bit of meat thrown in on good days).

Roasts meant a special occasion; fruit and vegetables mostly had a short season — when they were fresh and cheap. Cabbage soup may sound horrible, but it kept thousands of people alive.

VEGETABLES AVAILABLE TO ORDINARY PEOPLE:

potatoes	carrots	peas
cabbages	parsnips	beans
onions	celery	turnips
spinach	beets	radishes

FRUIT:

apples	pears	currants
rhubarb	goose-berries	black-berries

DRINKS:

water	milk	beer	cordials
-------	------	------	----------

Flavours:

salt	mustard	vinegar
oil	cheese	herbs
raisins/currants	suet	
lard		

WHY DID EVERYONE EAT THINGS THAT WERE GOING OFF?

Mostly because they had to — there wasn't anything else in the cupboard OR the shop. And partly because they were so used to it that they thought it was meant to be like that. Nobody realised it could make people ill. When you're hungry, you'll eat ANYTHING.

LUXURIES

- meat
- sweet foods of all kinds
- oranges
- lemons
- tomatoes
- tea
- coffee
- spices*
- wine

imported,
mostly;
so expensive

If you were very rich, you could buy (or grow in a hothouse) things like pineapple, apricots, peaches, strawberries and raspberries. You could also eat game — venison, grouse, pheasant.

The ordinary people never saw these sorts of foods on their table.



SPICES:

pepper, curry seasonings, cinnamon, vanilla, nutmeg, all-spice, cloves — highly prized because they hid the taste of bad meat. Expensive (they came all the way from the Spice Islands — South East Asia, Indonesia, Philippines —) so it wasn't only the poor who ate bad food.

WHY DID FOODS GO ROTTEN?

Food only goes bad when it gets old. We keep things refrigerated, frozen, canned or freeze-dried so that germs can't get at them and make them rot. Without any of those things to help us keep the bacteria out, we'd have the same problems. Getting fresh food to people in towns meant moving it by cart, not trucks; it took days instead of hours. With no ways to store things safely, other than drying, salting, pickling or boiling into a concentrate, the fresh food was rarely actually FRESH.

FOOD: WHAT COOK TOOK

"Provisions for Eighteen Months"

The Navy expected her men to WORK HARD. To do that, you have to feed them reasonably well; otherwise they just wouldn't be able to heave sails around all day.

This is the BASIC SEAMAN'S RATIONS at the time:

	Biscuit (lbs)	Beer (gall.)	Beef (lbs)	Pork (lbs)	Peas (pints)	Oatmeal (pints)	Butter* (oz)	Cheese* (oz)
SUN.	1	1		1	$\frac{1}{2}$			
MON.	1	1				1	2	4
TUES.	1	1	2					
WED.	1	1			$\frac{1}{2}$	1	2	4
THUR.	1	1		1	$\frac{1}{2}$			
FRI.	1	1			$\frac{1}{2}$	1	2	4
SAT.	1	1	2					

As well as this they had whatever fresh fruit, meat, fish, or vegetables they had got within the last few days.

* Cook's men had portable soup (cakes of boiled down veg/ meat broth) and sauerkraut instead of the butter + cheese on this basic list.

$\frac{1}{2}$ kg.

Called **HARD TACK**, because you can't bite a bit off until it has softened up (in water, soup, or by old age, mildew, + weevils). By 3 months it'll be **CRAWLING WITH BUGS**, but easier to eat. If you put it in the oven for a bit, the weevils will mostly get out; but usually everyone eats it as it comes.

1 kg.

SALTED; OR ANIVE

WATER + APPLES

• citrus syrup
• wine
• some beer
• rum
• goats milk (officers)

Watered down A LOT.

NEED FOOD TOO

mugfull bowlfull tablespoon $\frac{1}{2}$ a cup (a big one)

Extras: they took a few things to vary the flavour.

SALT MUSTARD SEED SUGAR VINEGAR
OIL BUTTER CHEESE JAM
RAISINS FLOUR DRIED BEANS EGGS (from chickens)

Wort of Malt: thought to prevent scurvy. Cook was to test it, so Endeavour carried enough to dose anyone who looked like they had the disease. Malt has only a tiny amount of vitamin C, so the stuff is useless; but Cook believed that THIS was what has saved his men.

Food they hoped to catch, find, buy, or trade for: fish (of course) + turtle; fresh meat, fruit, and vegetables, fodder for the animals, + wood for the ship's oven.

Could You TAKE ANYTHING ELSE?

Yes. You can tell the computer if you want to change the provisions; you will have to tell your teacher, too.

Just remember it has to last; Endeavour averages 90 miles a day, and Tahiti is 12,000 miles away.

FOR RECIPES, SEE ENRICHMENT SECTION *

HOW LONG CAN YOU STAY AT SEA?

After 3 months, your water will be foul, your wood (for ovens) running out, & there'll be signs of scurvy. If you are in the tropics your water won't stay drinkable this long.

Dried/salted/pickled stores were intended to keep for at least 18 months. As food on land was often eaten when it was 'off', the crawling state of ship's stores was considered normal.

Your initial supplies will keep for 1½ years, as long as you don't get them wet.

Cook took a water purifying machine that distilled fresh water from the sea — but it burned too much fuel, + couldn't produce the 376 litres a day he needed.

If it rains, you can catch water in the sails. If it's a real storm, you'll be too busy to do this; but a gentle downpour would give you a day's worth.

THE KNOWN WORLD

Europeans began to explore the world across the sea because of Christopher Columbus.

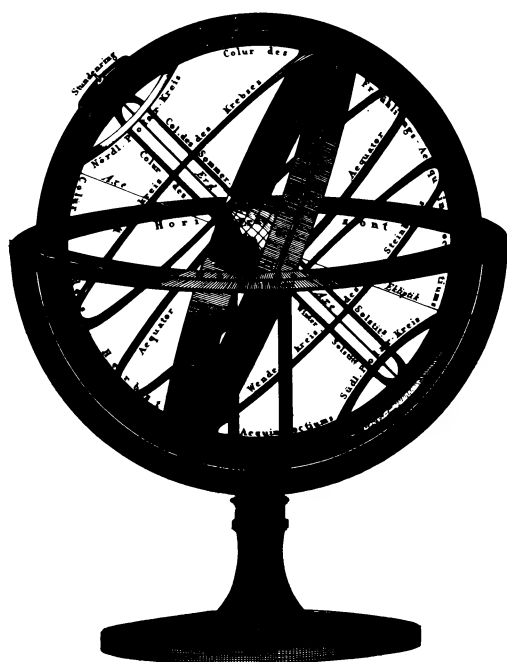
Before he got back from his first voyage in 1493, people generally thought that the world was flat, and that they knew most of it.

Columbus had dared to sail across the **Ocean Sea: The Atlantic** that everyone had thought led to nothing but the Edge of the Earth. Suddenly imaginations were fired up. He had changed everything! You could SAIL WEST, and reach Marco Polo's fabulous **Orient**! Curiosity, and the chance to make a fortune, made a powerful combination; the race to discover what was out there began in earnest.

At the start, it was a race between **Spain** and **Portugal**. A year after Columbus came back (with the news that he had reached **China** — it took a while to work out that he hadn't) the Pope settled a lot of arguments by dividing the world in two. He drew a line (on 46°37'W) in the mid-Atlantic. West for 180° was Spanish; East was Portuguese. **THE UNDISCOVERED BITS**, that is!

Soon, Columbus's discovery was recognised for what it was; a whole **New World** — *North and South America*. And beyond that, an enormous stretch of ocean — **The Pacific**.

The 250 years between Columbus and Cook are filled with hundreds of sailing expeditions, and the discoveries they made. In spite of the Pope's decree, many of those sailors were Dutch, French, and English, as well as Spanish and Portuguese. The division the Pope decided upon is still important in 1768, because the Spanish and Portuguese respect it, even if the others don't. All five nations have trading settlements and colonies around the world. The only gaps left in the exploration of the world from the SEA, are in the polar regions, and the North and South of the Pacific.

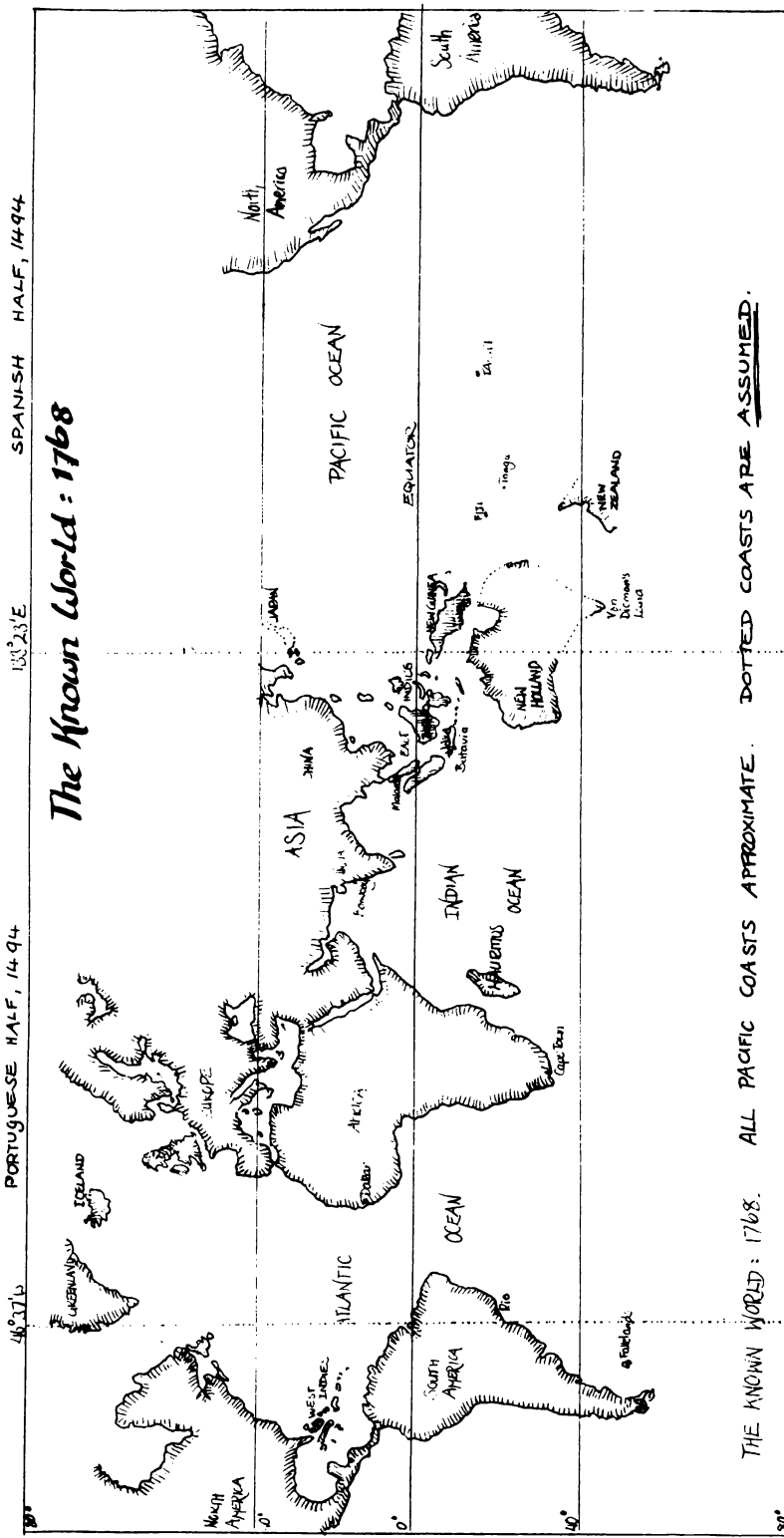


SO: WHAT IS THE WORLD LIKE, AS FAR AS COOK KNOWS?

The map on the back of this card shows you fairly well. It also tells you a bit about which European country had settlements where.

The **important** thing is ***Terra Australis Incognita***. Latin for "Unknown Southern Land". He was sent to see if it was there. Why? Because England wanted to make sure they found it before Spain (the Pacific and the Pope's Decree) did. Many sensible and scientific people looked at this map and thought: *"There is more land in the Northern Hemisphere than the South, according to this. That can't be right; it's out of balance, SO THERE MUST BE MORE DOWN THERE SOMEWHERE."*

That's why he wasn't sent to explore the unknown North Pacific. That's why the *Transit of Venus* was such a good cover story (after all, you don't want those Spaniards to guess what you're up to, do you?). Tahiti was an excellent place to view the Transit, and the sea to the South was unexplored. Many people felt certain he would find *Terra Australis* there. Wallis had thought he'd seen it; the terrible state of his crew prevented him from making sure. So the second secret part of Cook's orders sent him there to check it out.



EUROPEAN CLAIMS AND COLONIES:

Canada and Newfoundland — British
Eastern Coast of N. America — British, but claiming independence
Brazil — Portuguese (is on the Portuguese side of the Pope's line)
Rest of America — Spanish. Colonies in Peru, Argentina, Mexico, California.
Falklands — British (by the skin of their teeth)
Africa — Exploited by all except the Spanish. Dutch colonies well established in South Africa; Cape Town is a thriving port due to the

constant trade further East.
Mauritius — French. Colonised, good harbour and dockyards; not self-sufficient in food yet.
India — British. Colonised but unstable. Naval dockyards in Bombay.
S.E. Asia — Dutch, Portuguese and French trading settlements, competing for spices, silk, tea and opium. 100 years of exploitation is beginning to have bad effects.
Japan — not much known. Closed its ports to traders (Portuguese).

Philippines — Spanish.
New Holland — W. Coast charted (Dampier). No settlements.
New Zealand — W. Coast charted (Tasman) on the same voyage as Southern *Van Dieman's Land* and *Fiji*. No settlements in any, nor formal claims.
New Guinea — charted very roughly. No settlements.
Pacific Islands — no settlements. Marked on charts: Tahiti, Tonga, Solomons, Fiji, Pitcairn.

YOUR ORDERS

(In two parts, labelled "secret"; although the first part was common knowledge, the second part was not revealed to anyone until the ship left Tahiti.)

PART ONE

- *Sail from Plymouth as soon as possible, with provisions to last eighteen months.*
- *Go to Madeira to pick up wine that has been arranged, and any other food etc. that you need.*
- *Proceed to Tahiti, in time to observe the Transit of Venus. This is due to occur on the 3rd of June, 1769.*
- *If you need to stop for water, repairs, or provisions on the way, you can do so in Brazil, or the English settlement at Port Egmont in the Falklands.*
- *Do all you can to be friendly to everyone you meet.*



PART TWO

- *After observing the Transit of Venus, go South as far as 10° S, and see if there is (as we suppose) any land there.*
- *If you find nothing, and the condition of your ship and crew allows it, go West from there until you discover it, or the Eastern coast of New Zealand. See if New Zealand is part of this large Southern land.*
- *Take notes, and make charts, of ALL you discover. Examine the soil, minerals, animal and plant life, human inhabitants, and anything else you think will be useful information. Collect seeds and other specimens to bring back.*
- *Take possession of any likely lands, as long as the natives agree.*
- *Return by whichever route you think is best.*
- *Do not tell anyone where you have been until you have the Admiralty's permission to do so.*
- *Report to us as soon as possible on your return.*

D. AFB 3079 JULY, 1768:

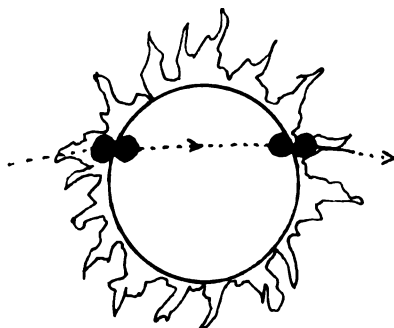
Signed by the three Lords of the Admiralty.

The second part of these orders weren't published (or publicly known) until 1928; they had remained secret all that time, even though Cook's discoveries were revealed in the same year he returned.

TRANSIT OF VENUS

WHAT?

It's when Venus passes between the earth and the sun; so we see it as a small black circle moving across the face of the sun.



WHY?

The aim was to use this to work out how far away the sun is from Earth.

By measuring the TIME Venus took to cross the face of the sun from lots of different places on Earth, and having a good idea of the size of all three "heavenly bodies", and the distance of Venus from us at that time, they could work out how much further away the sun was.

WHO?

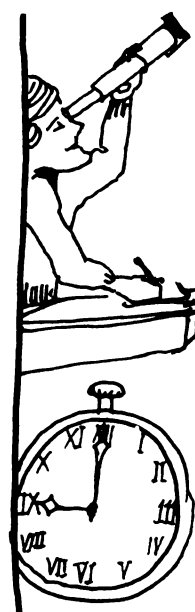
When it happened the time before (1761) hundreds of observers timed the transit (and noted WHERE Venus appeared to do it) in places like Greenwich, Siberia, Turkey, India, Sweden and Peking. All their results were collected and compared. Unfortunately, due to the difficulty of knowing exactly where the sun itself (and not it's corona) began and ended, the result was inconclusive. The 1769 transit gave all these people a second go at it. As they were most unlikely to be able to have a third go (in 1874!) they all took it terribly seriously. That's why it isn't so incredible that Cook could be sent so far for just this opportunity.

WHEN?

December 7	1631
December 4	1639
June 6	1761
June 3	1769
December 9	1874
December 6	1882
June 8	2004
June 6	2012

and so on.

(If you are clever, you can work out the pattern.)



HOW?

4 important times:

first touches edge of sun



first seen totally ON the face of the sun



reaches other edge



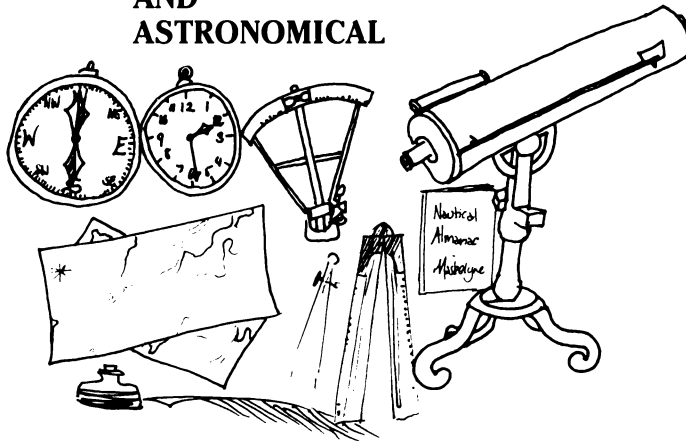
last touch an edge of sun's face



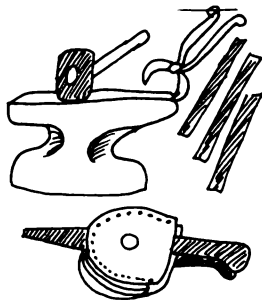
Just after 9.00 am, Tahiti time, this would begin. As it can only happen in daylight, only half the world could see it; can you figure out which half?

NECESSARY SHIP'S GEAR

NAVIGATIONAL AND ASTRONOMICAL

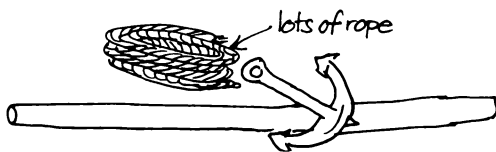


*SAILS AND SPARE CANVAS (lots of it)



BLACKSMITH'S FORGE TOOLS AND IRON

LOTS OF ROPE



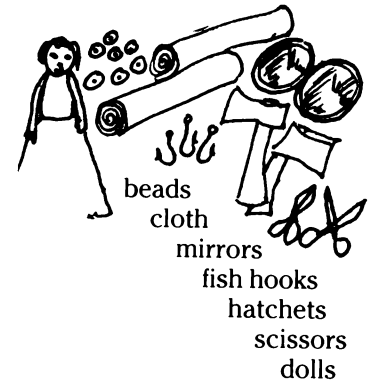
spare anchors, spars and rigging

COOKING GEAR AND EATING GEAR

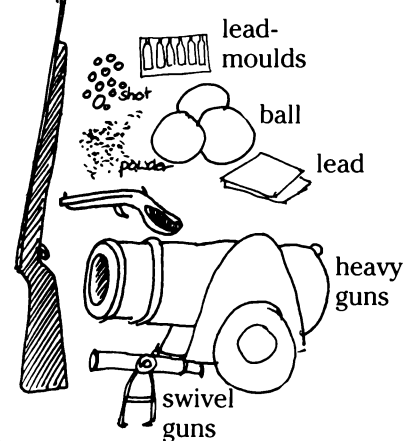
fuel (wood)



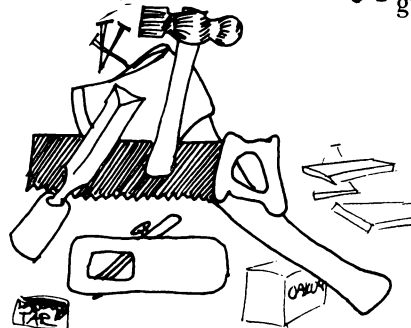
TRADING GOODS:



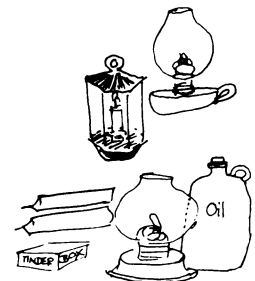
DEFENSIVE



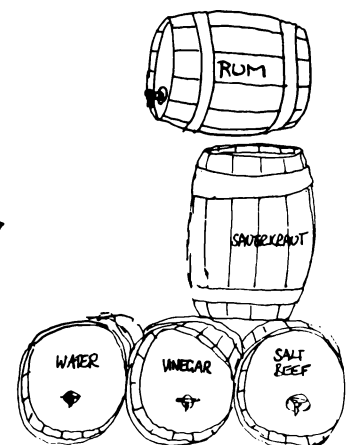
CARPENTRY TOOLS



LIGHTS



MEDICAL SUPPLIES



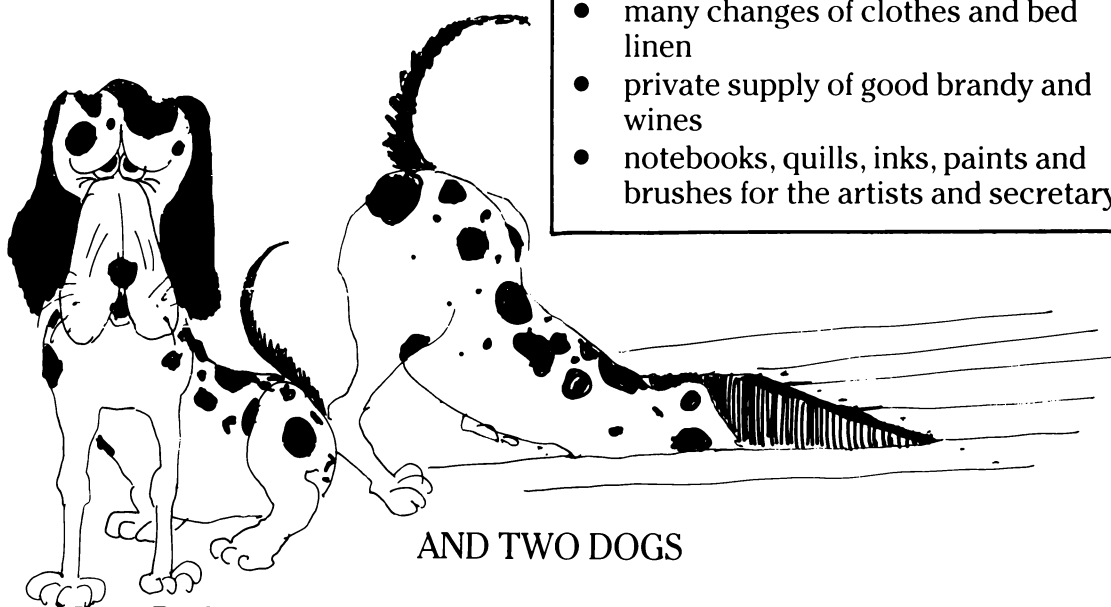
WHAT BANKS TOOK

PEOPLE:

- Dr. Solander — naturalist and good friend
- Sydney Parkinson — artist — to draw plants
- Alexander Buchan — artist — to draw scenes and people
- Herman Spöring — secretary — to take notes
- James Roberts
- Peter Briscoe Servants
- Thomas Richmond
- George Dalton

LUGGAGE:

- large collection of Natural History books
- assorted insect traps and machines for preserving specimens caught
- nets, trawls, lines and hooks for catching sea creatures
- underwater viewing device
- cases of stoppered bottles for preserving things in spirit
- salt and boxes to preserve seeds in
- guns for bringing down game and specimens
- nets to catch birds
- many changes of clothes and bed linen
- private supply of good brandy and wines
- notebooks, quills, inks, paints and brushes for the artists and secretary



AND TWO DOGS

Banks was an extra-ordinary man. He paid for the passage of all the people he took, and wages for all but Dr. Solander. The botanical collecting gear he had with him would have cost a small fortune. His wealth and social status allowed him to do eccentric things like this voyage. Certainly not a common sort of journey for a rich young man to embark on.

His enthusiasm was both genuinely scientific — the thrill of discovering the unknown — and social: it was all going to make great conversation when he got home to tell everyone about it.

He got on well with almost all the native people they met, and tried hard to come to terms with their vastly different cultures and make sense of them from his point of view. Never really successful at this, he nonetheless tried, which is more than can be said of most of his contemporaries.

PLACES YOU CAN GO

IF YOU ARE IN TROUBLE AND NEED FOOD OR REPAIRS

IN THE ATLANTIC

ISLANDS:

Madeira	}	Portuguese settlements; all fairly well equipped for supplies, repairs and news.
Azores		
Canaries		
Cape Verde		
St. Helena		British. No good harbour, little food to spare.
Falklands		British. Very small garrison outpost; doubtful help.

SOUTH AMERICA:

Brazil is the only part that isn't Spanish. There are several possible ports; all colonies of Portugal: Rio de Janeiro is the largest (it's the capital of the colony). Good harbour, plenty of sugar and ORANGES, beef and other supplies; will probably be able to help with repairs too.

Pernambuco (now Recife)	}	much smaller and less likely to have provisions to spare, but not hopeless.
Bahia (now Salvador)		
Santos		

AFRICA:

Dakar is the only large settlement on the West Coast. A combination of Portuguese, Dutch, French and English, mostly slavers. May be able to assist you if you really need it.

Cape Town is a thriving Dutch Colony on Africa's southern tip. Self-sufficient, used as a port by all the East Indies traders, they will be able to supply everything you are likely to need.

IN THE PACIFIC

The only settlements are all Spanish. Not only will they be unfriendly, but their position and condition is doubtful; all the information is about 30 years old. Avoid them if you can.

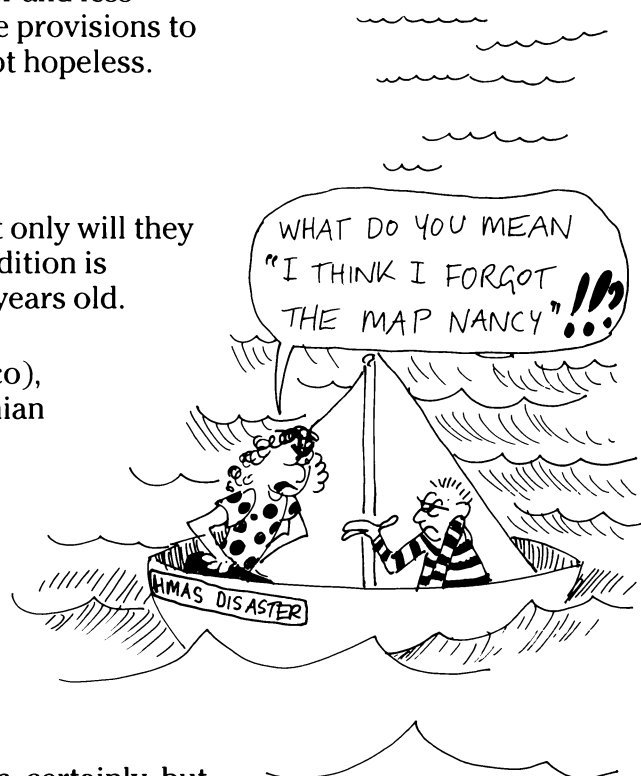
There's Callao (Peru), Acapulco (Mexico), Manila (Philippines) and several Californian settlements.

IN ASIA:

Batavia (Java)	— now Djakarta	Dutch
Malacca	}	Portuguese
Macao		
Bombay	~ English	
And	— Mauritius	~ French

All may be able to help. Supplies for ships, certainly, but supplies for repairs depend on whether they've got any left at the time.

These places are all marked on your voyage map.



PLACES YOU ARE SUPPOSED TO GO

TAHITI AS ENDEAVOUR FOUND IT

(For a great view of the whole island, look up pages 30-31 in David Attenborough's "Life On Earth". Collins/BBC, London, 1979.)

Mountainous, volcanic, ringed by a coral reef, it's lush and tropical with coconuts, bananas, breadfruit, plaintains, etc.; all good food and grown easily in the hot climate. There are also plenty of fish, some turtle, pigs and birds to eat.

The Tahitians had seen Europeans before, and had also seen what a ship's cannon could do (Wallis had fired into a village in an attempt to demonstrate some authority). Other than that incident, the local people had got on quite well with their visitors.

Cook and Banks tried very hard to understand the Tahitian society. Banks was at pains to learn the language; Cook was determined to leave these friendly people with a happy memory of the ship's stay.

There were about 50,000 people. They lived in a way that had many similarities to the Europeans — they farmed, lived in small villages with recognizable houses, and there were nobles, priests and workers. Quite like "home". The crew obviously found the Tahitian women attractive, and vice-versa. They were very interested in all the trading goods and valued them highly.

The only problem seemed to be that the Tahitians were so curious about everything European that they stole everything they could, and they were so quick to work out a good use for things that they never gave them back.

When someone stole an important part of the observation gear, Cook HAD to get it back. To do this he took hostages. It worked. He did the same when two men deserted, just before they left; he was furious at being forced to frighten people who, he realised, had done no great wrong — in order to get these two "fools" back.

The Endeavour stayed in Tahiti for three months; many of the men on board spent most of their spare time in the company of the local people — usually the female half! (Several of them copied the Tahitian practice of tattooing for decoration and began the sailor's tradition of tatoos.) Banks and some others learnt enough of the language to be able to ask questions and get answers. The ship's men certainly enjoyed their stay; they were healthy, entertained, welcomed, comparatively well-fed, and once they had built Fort Venus and finished setting up the observatory, mending ship's gear, and cleaning up the ship and her stores, they had plenty of time to get to know the people.

Banks and Cook had some idea of the complicated and spiritual nature of the Tahitian way of life; language problems made it impossible for them to discover the real basis of these people's lives; in three months, they didn't do too badly.

The rules Cook set for his men may interest you; see the back of this card.



Rules to be observed by every person belonging to His Majesty's Bark the Endeavour for the better establishing a regular and uniform Trade for Provisions &c with the Inhabitants of George's Island. (Tahiti)

*1st. To endeavour by every fair means to cultivate a friendship with the Natives and to treat them with all imaginable humanity.
A proper person or persons will be appointed to trade with the*

2nd. Natives for all manner of Provisions, Fruit, and other productions of the earth; and no Officer or Seaman or other person belonging to the ship, excepting such as are so appointed, shall Trade or offer to Trade for any Provisions, Fruit, or other productions of the earth unless they have my leave to do so.

3rd. Every person employed on Shore on any duty whatsoever is strictly to attend to the same, and if by neglect he looseth any of his Arms or working tools, or suffers them to be stole, the full value thereof shall be charged against his pay according to the Custom of the Navy in such cases, and he shall receive such further punishment as the nature of the offence may deserve.

4th. The same penalty shall be inflicted on every person who is found to imbezzle, trade, or offer to trade with any part of the Ship's Stores of what nature soever.

5th. No sort of Iron, or any thing that is made of Iron, or any sort of Cloth or other usefull or necessary articles are to be given in exchange for anything but Provisions.

J.C.

Remember that 4 of Cook's Officers — Gore, Molyneux, Pickersgill and Wilkinson — had been here before on Wallis's "Dolphin". They had men pulling nails out of the ship's hull to give to their Tahitian lovers. Iron was VERY useful; a nail could be hammered into all sorts of durable sharp shapes. It's possible that the Tahitian women were attracted to the iron they could get in return for their favours, more than the men themselves.

Banks frequently noted that the women had beautiful hair until you got close enough to touch it; he found the smell of rancid coconut oil and the fact it was crawling with lice a bit off-putting. (In typical Banks' fashion, he just set to with a lice-comb.) The hair of the men below decks was probably very similar.

PLACES YOU ARE SUPPOSED TO GO

NEW ZEALAND

Abel Janzoon Tasman charted New Zealand's West Coast 127 years before Cook arrived. He had little contact with the Maoris; so when Cook arrived on the East Coast, Endeavour must have been quite a sight to the people of these islands.

The Place: New Zealand's two main islands stretch for more than a thousand miles, between 33° and 53°S. The climate ranges from semi-tropical to fairly chilly. The weather, particularly on the West Coast, is very variable, with frequent sudden storms. There are active volcanoes, many mountains and spectacular scenery.

The People: Unlike the Tahitians, the Maori often reacted aggressively to this strange ship full of strange people.

A warlike people, strangers were treated with suspicion. Often the Endeavour was greeted by a fleet of war canoes, filled with tattooed, yelling faces, waving clubs, shields and spears in an unmistakable fashion.

Sometimes there was successful (and peaceful) trade. Other times there was trouble. It takes brave men to paddle out and talk to a sight like the Endeavour full of men who looked so peculiar, but that's what the Maoris often did. They often paddled out and attacked. When they did that, Cook fired muskets over their heads. Sometimes that didn't work; if the Maoris kept coming, he shot AT them. On a couple of occasions, this had to be repeated with the ship's cannon to stop them.

Even if the Maoris approached in a less threatening way (as the voyage progressed, word must have got around that the strange ship was trying to be friendly and they had less trouble) they sometimes took trade items without giving anything back in exchange, and

other times, a few refused to leave the ship once they'd got on.

Cook spent 6 months charting New Zealand to make sure it wasn't part of "Terra Australis Incognita". He was sailing for most of that time, so didn't stay in one place for long enough to get to know any of the many Maori groups much at all.

He needed to trade for food; he had hoped to make friends with the peoples he met. In New Zealand he kept trying. The times he ordered his men to fire on the Maoris were all times he felt the ship was really in danger. His persistence, and constant friendly approach, made the difference between starvation and plenty for his crew, for eventually trade did happen.

The picture he had of the New Zealanders was very thin; one thing he felt sure of was that any attempt to colonise Maori land would be difficult.



WHAT COOK FOUND

Cook meant to go to Van Dieman's Land and sail North from there, to see if that coast (charted by Tasman) was joined to the unknown East Coast of New Holland or not.

He ended up sighting land (at what is now Cape Everard) in N.E. Victoria instead — the winds wouldn't let him go south without a great deal of effort and time.

By this time they had been away for 20 months; they were short of stores and sails and rigging were wearing out. He was in a hurry. So, he headed north to discover New Holland's Eastern shore.

The following is what he found, in his own words —
(From Cook's Journal; Thursday 23rd August, 1770.)

"... hardly anywhere can be called a Mountainous Country ... it is indifferently well-watered, ... with small Brooks and springs, but no great Rivers, unless that be in the Wet Season ... but this can only happen in the Tropick.

... for the most part friable, loose, sandy Soil; yet indifferently fertile and clothed in woods, long grass, shrubs, &c ... Most of the large Trees in this Country are of a hard and ponderous nature and could not be applied to many Purposes. ...

The land natrly produces hardly any thing fit for man to eat, and the Natives know nothing of Cultivation. ...

Land Animals are scarce, and as far as we know confin'd to a very few species ... the sort that is in the greatest plenty is the Kangooroo ... we saw a good many of them about Endeavour River, but only kill'd Three which we found very good eating. ...

The Natives of this country ... go about quite Naked ... even the Women do not so much as Cover their privities. Altho none of us were ever very near any of their women, one gentleman excepted, yet we are all satisfied of this as if we had lived among them ... I think them a timourous and inoffensive race ... They seem to have no fix'd habitation, but move about the place like wild Beasts in search of food. ...

Their houses are mean small hovels not much bigger than an oven ... their canoes are as mean as can be conceived. ...

From what I have said about the Natives of New Holland they may appear to some as the most wretched people upon Earth, but in reality they are far more happier than we Europeans ... The live in a Tranquillity which is not disturbed by the Inequality of Condition: the Earth and Sea of their own accord furnishes them with all things necessary for life, they Covet not Magnificent Houses &c; they live in a warm and fine Climate and enjoy a very Wholsome Air, so that they have very little need of Clothing, and this they seem to be fully sensible of, for many to whom we gave Cloth &c to, left it carelessly ... as a thing they had no manner of use for. In Short, they seem'd to set no Value upon any thing we gave them."

If you want to read the complete extract it can be found in *The Explorations of Captain James Cook in the Pacific, As Told by Selections From His Own Journals, 1768-1779* Edited by A. Grenfell-Price; Angus & Robertson, Sydney, 1969. **It's well worth a look.**

The near-wreck on Endeavour Reef is described in some detail on the "Incidents on Cook's Voyage" card.

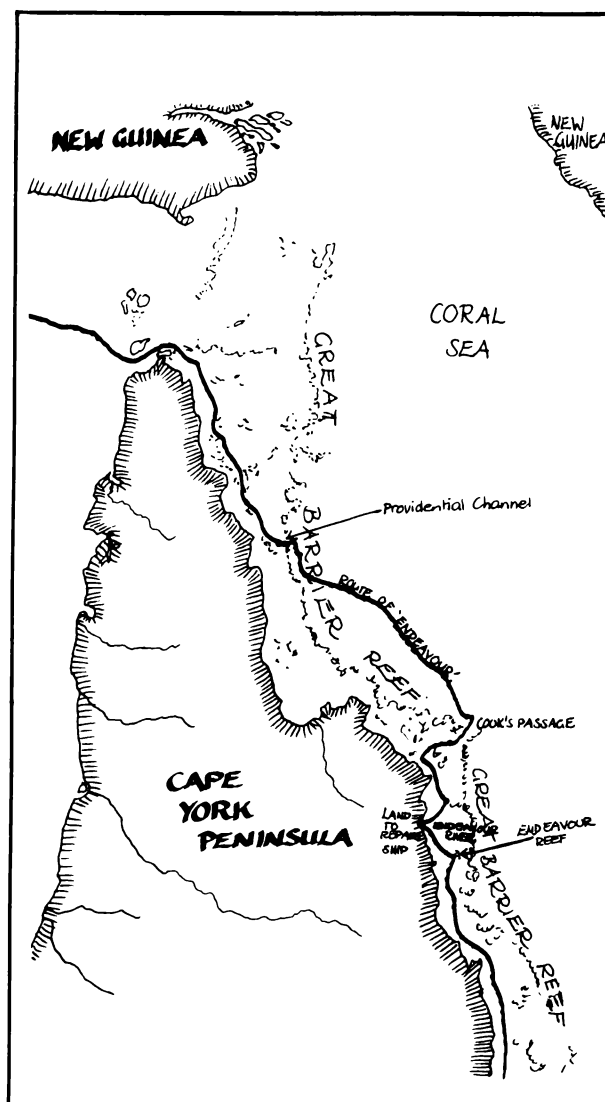
If you look at this map, you can see where he went.

The Barrier Reef was an unknown danger, until it closed in on the Coast they didn't know it was there. For weeks they crawled North with longboats ahead searching for channels through the deadly coral shoals, and two men sounding the depth constantly.

There has been a lot of argument about this part of the journey. It was such an incredible feat of seamanship, combined with good luck, that it has been suggested he had help — in the form of a map that told him much more about these waters than he let on. This may or may not be true. The argument goes like this:

1. Once they successfully floated the ship off Endeavour Reef and plugged the hole, why did Cook go north (to Endeavour River) to lay her up for repairs if he had no idea what was there? Surely it would have been better to go south to a coast he had charted already and a known destination?
2. How did he manage to find a way out (Cook's Passage) and back in (Providential Channel) amongst the thousands of miles of reef that lie like a minefield all along that coast, without holing the ship more than once?

According to Cook, he headed north because the wind gave him no choice and he knew nowhere close by to the south which would do. North to the unknown was what it had to be. What a decision to have to make though! As for the rest of the argument, he found those channels by a mixture of common-sense, experience, grim determination and luck. The boats out searching, the men sounding, and the



will to survive driving them all on. Cook also claimed to be the first European to chart these waters; from what has been written about him, he certainly appears to be a man of his word. The voyage through the Barrier Reef proves his worth as a seaman and navigator.

COOK'S VOYAGE

WHERE DID HE GO?



Plymouth 26 Aug. 1768

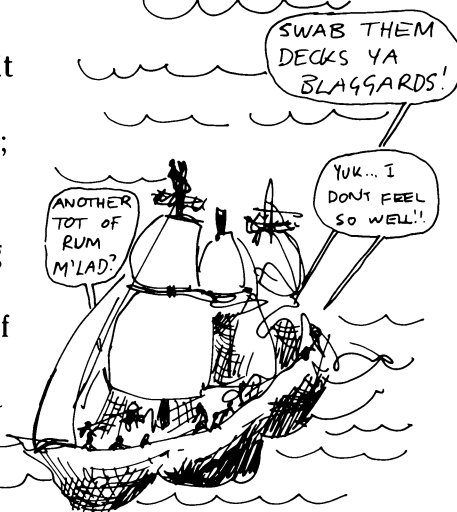
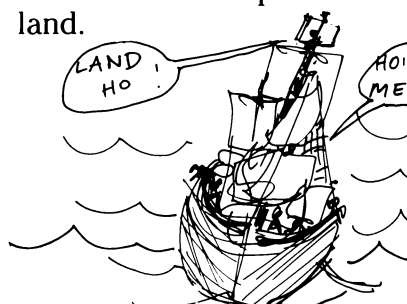
Madeira Sept. 1768. Took on fresh stores; Madeira wine (which kept well), water, fruit, vegetables and livestock.

Rio de Janeiro Nov. 1768. Detained here for 6 weeks due to red tape. (The Portuguese administrator found it hard to believe they weren't pirates.)

Tierra del Fuego 11 Jan. 1769; 16 Jan. Straits La Maire; 33 days rounding Cape Horn (lucky — very calm weather) "Dolphin" took 3 months.

Tahiti 11 April 1769 to 13 July to mid-August exploring the islands south and west.

South to 40° 2 Sept. 1769. 39°45'S 145°39'W. No signs of land.



West to New Zealand 7 Oct. 1769 to 1 April 1770.

Mapped both Main Islands. Proved not part of "Terra Australis Incognita".

West to Australia 19 April 1770. Sight Point Hicks (Hicks saw it first). Now Cape Everard, off Malacoota. 10 June, nearly wrecked on Reef. 4 Aug. repaired; to continue.

North up East Coast of Australia Cape York 21 Aug. 1770.

Through Endeavour Strait 22 Aug.

Round South Coast of New Guinea 29 Aug. 1770. More repairs till 30 Sept.

Batavia 10 Oct. 1770 to 26 Dec. 1770. Mending the hull properly. All on board affected severely with malaria and dysentery.

Cape Town

St. Helena

Home 13 July 1771. Almost 3 years at sea.



WHAT REALLY HAPPENED

INCIDENTS ON COOK'S VOYAGE

CROSSING THE EQUATOR:

The first time anyone "crosses the line", they either pay a ransom of 1 bottle of rum, or are ducked over the side (tied to a chair). Cook, Banks, Solander, Banks's dogs

and the ship's cat all paid the ransom; everyone else had to put up with a dunking, unless they could prove they had been over the equator before; about 21 got wet, in all.

TAHITI:

The 3 months spent in Tahiti must have been like a holiday to most of the Endeavour's crew. Good weather, enough to eat, and not too much to do once Fort Venus was built. Almost all of them had a good time there, particularly with the ladies. See TAHITI in the information cards for more about their stay there.

Banks and Monkhouse (the surgeon) actually fought a duel over one particular girl. With pistols. (They both missed.) Cook was furious when he found out about this, and made sure they "upheld their dignity as gentlemen henceforward".

Most of the marines got held under for a long time — so did anyone not well-liked by the crew.

MR. ORTON'S EARS:

Off the coast of Australia, Orton (the Captain's Clerk), and several other crew members, probably the midshipmen who would have known him fairly well, were all the worse for drink. (This happened to Orton quite often — getting drunk — he seemed to dislike being at sea.) This time, someone or several someones cut off all his clothes. That was pretty bad but they didn't stop there; they cut off part of BOTH ears as well. Why? Who? You can make up just as good a reason and be just as much a culprit as we can!!

GREENSLADE — A SAD STORY

He was a marine. What really happened is a mystery; but he was accused of stealing a small piece of sealskin; denied it; got ragged about it a lot by the navy men, who seemed to want to give him a hard time for no other reason than "he isn't

one of us". This went on for a few days. Then the Marine Sergeant bawled him out for letting down the side. He must have felt he hadn't a friend in the world, for that night he threw himself overboard, into the unfriendly arms of the South Pacific.

FROZEN TO DEATH:

On landing at The Bay of Success, on the Western Coast of Tierra del Fuego, Banks, Solander, Buchan, Banks's four servants and 2 sailors set off to collect as much as they could from the island's icy mountains.

Fine and clear as they left, the weather rapidly turned bad; the land proved boggy and dense undergrowth soon had them exhausted AND lost. They dared not stop and rest, for fear of never waking. Next morning found them hungry, worn out, and scared. Poor Buchan had an epileptic fit that forced them to collect themselves and find him shelter and light a fire. In the meantime, Dorlton and Richmond, Banks's 2 negro servants, had disappeared with all the rum they carried. Another night came and went.

They shot and ate a vulture — it was all the food they had — and found the 2 missing men; both frozen solid in the snow.

The snow stopped; they finally found their way back, carrying Solander, Buchan and a sailor called Briscoe, but safe. Except for Dorlton and Richmond. Rum only makes you THINK you're warm.

SHIPWRECKED:

When Cook decided to map the entire unknown East coast of Australia, he was doing what seemed sensible at the time. There was this huge gap on the charts, and he was in a fine position to fill it.

What he didn't know was that doing this was going to be incredibly dangerous, for one very simple reason — The Great Barrier Reef. By the time Cook realised it was there, he had sailed north inside it's barrier, for nearly 1000 nautical miles.

How had that happened? Easily! At it's southernmost point, the reef is more than 400 miles from the coast. Nobody would guess it was there at all. It gradually comes closer and closer, until it finally becomes a mass of coral outcrops, islands, smaller reefs, and narrow channels that all but meet the coast; from Port Douglas to Lizard Island, it's like that.

To turn round and go back was as hazardous as keeping going. With boats out, sounding depths and finding channels, and even towing *Endeavour* if the winds weren't favourable, Cook pressed on. He sailed at night, if there was a moon, because moonlight lit up the shoals better (without the glare) than sunlight.

In spite of this, the worst happened. A sudden, sharp jerk and *Endeavour* was stuck fast. Tide and wind pushing her harder onto the coral, and a hole was punched in her side, taking water fast.

What did they do? Furlled all sails, for a start; sounded all around to find the reef; threw 50 TONS of guns, ballast, rotten food, ammunition, and other non-essentials overboard (Cook marked the guns with buoys first!) and waited for high tide. AND PUMPED.

12 hours later, at next high tide, they were still stuck; everyone, including "the gentlemen" was taking a turn at the pumps. They kept this up until the next high tide, having thrown off all their fresh water, wood, oil jars, hoop iron and more. This time she floated. She was 6 leagues from land. A sail was sewn with wool and oakum, and spread with sheep's dung (knew that'd have to come in handy!) and dragged round the outside of the hull to the leak. That way, the push of the sea trying to get in actually held the sail-plug in place. It took 1 pump instead of 3 to keep the water level down, as they limped carefully to safety.

Then the small size of *Endeavour* saved her. She was "heeled over" on her side in "Endeavour River", and mended as best they could. This was good enough to get them (as long as there was no really bad weather or another wreck) to the nearest equipped port, to be repaired thoroughly. If *Endeavour* had been any bigger or a different design she would have been impossible to tip on her side and right again afterwards.

So they sailed cautiously to Batavia — where their ship was repaired, but almost everyone on board caught malaria and/or dysentery. Killers, both. From Batavia, home however 30 men died of dysentery combined with malaria. Whether this would have happened without the shipwreck is hard to say. Dysentery was carried in the water and fruit brought on board. They had to get water and fruit from somewhere; and anywhere in the tropics that had European ship-mending facilities was as likely to be rife with disease as Batavia and surrounds were.

COOK'S MEN

WHAT HAPPENED TO THEM?

ONE THIRD DIED; THE REST MADE IT HOME, EXCEPT ONE

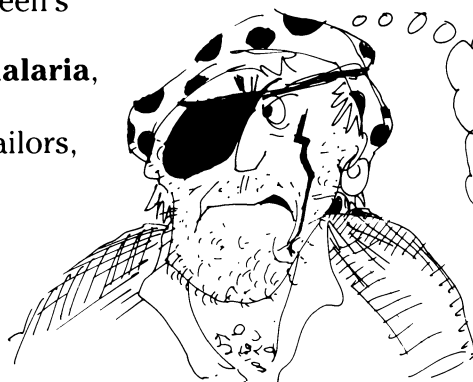
Disease:

- Reading — at sea of **alcoholic poisoning**, 28/8/1769
- Molyneux (master) — **dysentery/malaria, and alcohol**, Batavia
- Monkhouse (surgeon) — **dysentery**, Batavia
- Taiata (young Tahitian) — **dysentery, unsuitable food**, Batavia
- Tupaia (Tahitian priest and pilot) — **dysentery, ship food and homesickness**, Batavia
- Reynolds (Green's servant) — **dysentery/malaria**, Batavia
- 3 unnamed sailors, ditto.

When at sea again, out of Batavia, with 20 new crewmen to cope with sailing as the rest of Endeavour's crew were almost all ill, they stopped for fruit and water that must have been seriously infected; 23 more died of dysentery on the way home, among them:

- Truslore (corporal, marines)
- Spöring (secretary)
- Parkinson (artist)
- Ravenhill (sailmaker)
- Green (astronomer)
- Thompson (cook)

- Monkhouse (midshipman)
- Slatterley (carpenter)
- Simpson (seaman)
- (the rest — 14 — unnamed)
- Hicks died of TB only weeks from home
- Buchan's epilepsy caused his death (presumably heart-attack) in Tahiti
- And Patrick Saunders, midshipman, deserted successfully in Batavia, and has never been heard of since.



I KNEW I SHOULD HAVE JUMPED SHIP IN TAHITI!

The stop in **Batavia** and even more so the stop just after that which brought infected food and water on board (Cook must have avoided fresh Batavian provisions in the hope of preventing this very thing), caused the severe illness of EVERY SINGLE PERSON ON BOARD.

It was like a hospital ship. Mosquitoes bred in the water-butts.

Batavia was a typical European settlement in the tropics. The warm climate made the European style of life and standard of hygiene a complete death trap.

In desperate need of repairs Cook had no real alternative. Let's hope you can escape such a fate! After all, not all the ships that visited such places suffered as Endeavour did.

Frozen:

Dorlton and Richmond 2 of Banks's servants **lost in a blizzard**, Tierra del Fuego. Drank lots of rum, fell asleep and that was it.

Drowned:

Weir (quartermaster) off Madeira (**caught in anchor chain**)
Greenslade (marine) **committed suicide**
Un-named sailor — **fell from rigging** into sea and not found.

SAILING

WHAT HAS TO BE DONE AND WHY

JOBS ON BOARD

LOOK-OUT

more often at the fore's head (bows) than crow's nest, but possibly both. Watch for land, reefs, rocks, floating debris, approaching storms.

HELMSMAN

usually one man for one hour, and two in bad weather (tied to the wheel to stop them from being washed overboard). Steer the ship on the right course.

NAVIGATOR

plots course according to destination, winds and currents, and distance covered since last position taken. Has to estimate position allowing for all this and work out where to go.

TOPMEN

agile acrobats who can climb up to the top sails and furl or unfurl them as required, no matter how bad the weather and seas are.

SAIL-TRIMMERS

the sail's angle to the wind is altered frequently (especially if the ship has to tack across the wind); by sheer manpower the sails are hauled across and set for the new course. This is where sea-shanties were sung — to keep the hauling effort rhythmic and useful — working together instead of against each other.

THEN THERE ARE ALL THE THINGS THAT KEEP THE SHIP AND CREW ALIVE:

DECK-CAULKING

filling all the gaps that keep appearing as the weather changes — with oakum (flax soaked in stockholm tar) and pitch (bitumen) to keep the ship as waterproof as possible.

SAIL-MAKING

a special skill; it also meant mending on a long voyage like this. The sails had to be able to take high pressures and were kept as strong as possible by a team of nimble fingered craftsmen. A full-time job.

COOKING

everyone had to work pretty hard, so the 3 meals a day had to keep them going and vary as much as possible (a difficult task). 3 cooks, each with an assistant or two.

METAL MAINTENANCE

Iron parts were mainly blackened with tar to prevent the salty sea air turning them to rust.

CLEANING

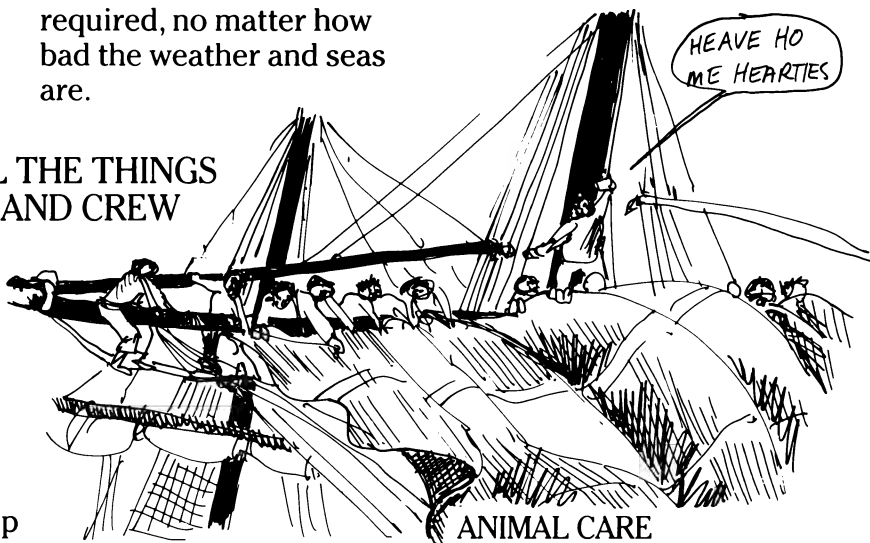
for 94 people squashed in to a 30 metre × 9 metre enclosed space, this was essential. The gentlemen had their servants, the officers theirs — the crew had to look after themselves, and everywhere else outside the gentry's cabins.

ANIMAL CARE

the animals had to be kept healthy in cramped quarters if you intended to eat them in the future; fed, moved out of danger, put on deck for air and sun whenever possible, watered, exercised.

CARPENTRY

the ship's carpenter (shipwright) and his crew had to keep her afloat and sailing, basically. If anything wooden broke, needed altering, or just repairs like chairs and barrels, they did it. This was a full time occupation.



NOON-SIGHTING

vital if you want to know where you are. As many men as possible got their octants/sextants out and measured the angle between the horizon and the sun at its highest. Look up in the Almanac (and know the date) and you have your latitude.

LOG-LINE RECKONING

this took 3 men. A sea-anchor (log of wood) with a light rope tied to it, is thrown overboard behind the ship. The rope has knots in it every 48 feet exactly. One man holds a spindle loaded with this rope, and lets it pay out as the ship moves away from the log, counting the knots as they go. The second man has a 30 second sand glass (egg-timer). He counts each 30 second interval. A third man keeps track of the number of knots called out in each 30 seconds for a while, and then averages them out. This gives you the ship's speed. 6 knots means 6 nautical miles in one hour. (A nautical mile is one minute ($\frac{1}{60}$ of a degree) of latitude $\approx$ 1.85 kilometres.

RIGGING AND ROPE MAINTENANCE

all the sails and masts are held up/moved/climbed up to/ on ropes that HAVE to be constantly checked and mended BEFORE they break. Lives depend on it. The anchors, log-line, lashings on spars, safety lines on deck, and even the men's hammocks are included in this.

STORE-KEEPING

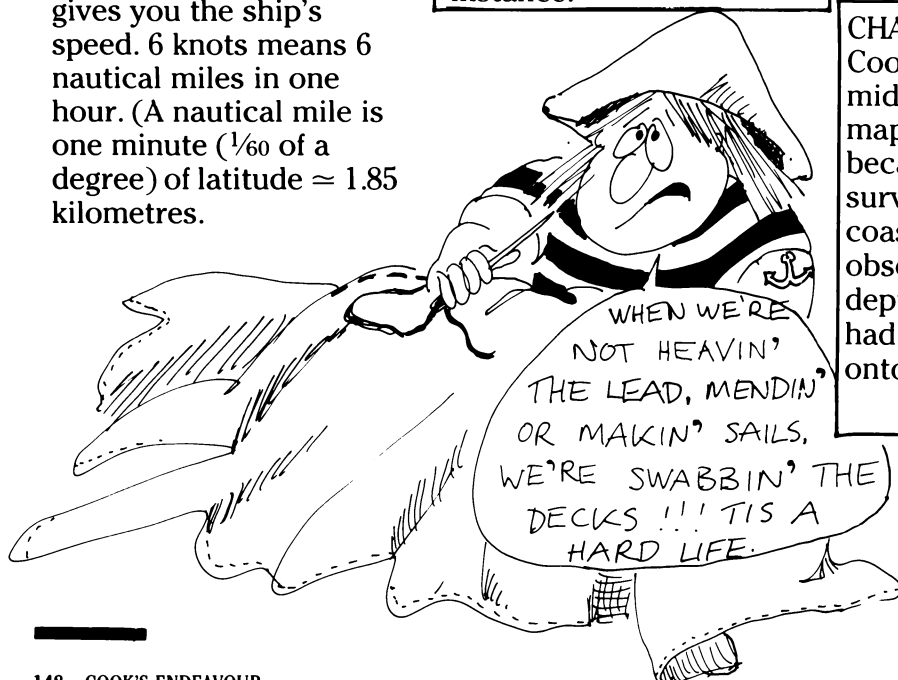
sorting out what needs to be eaten most urgently; keepings things sealed and stowed safely; drying out (biscuit especially) wet stores, and scraping them "clean"; doing what you (and the ship's cat and Banks's dogs) can to keep to keep the rats and other smaller vermin out; and keeping track of how much of everything you've got left, and how long it'll last, particularly water. They threw handfuls of lime (calcium carbonate) into the water barrels to "purify" them, for instance.

DEPTH SOUNDING

or "HEAVING THE LEAD" this had to be done constantly whenever the water was shallow — near land, shoals, reefs, etc. and whenever the colour of the sea looked suspicious to the Captain or Officer On Watch. It was very strenuous, so took several men on watch in uncharted waters. What they did was hang out over the side (next to the bowsprit) in a special sling (so you won't fall), and throw a weighted line (knotted at every fathom — 6 feet) out ahead of the ship. This took a mighty throw, because the idea was to get it to sink to the bottom and have the rope taut when the ship was directly above the weight — so the line was vertical, and the depth was measured accurately. In very shallow water the rope was marked every foot.

CHARTING

Cook's clerk and midshipmen had a lot of map drawing practice — because Cook actually surveyed almost all the coasts he met. The observations, distances, depths, and bearings all had to be drawn carefully onto a chart for each area.



PERILS

TERRIBLE THINGS THAT MIGHT HAPPEN AND WHAT TO DO ABOUT THEM

SHIPWRECK

See "Incidents on Cook's voyage" for one example of this. If your ship is totally wrecked, then your task is to survive it as best you can.



ATTACKED BY OUTRAGED NATIVES

You shouldn't have upset them in the first place, should you:- but it's too late to change that now. You can surrender; run if that's possible; or fight back. It's your decision.



CAPTAIN DIES

Next in command takes over. As long as Hicks, Gore, Green, or even Molyneux are okay you still have someone who can find the way home.



MUTINY

If the crew take over the ship, then they will either kill all the people who oppose them, or cast them adrift in one of the boats, or maroon them on the nearest land if there is any.

It's a good idea to keep **morale** in mind at all times, and prevent this from happening to you! If it does, then your task once again is to survive to tell the tale.

WATER AND FOOD GETTING LOW, AND NO LAND IN SIGHT

Look for any signs of land — birds; floating weed or debris; cloud low on the horizon; smoke; and head

for it. Halve rations. Collect condensation from sea water (if you can). Don't wash.



BECALMED

Without wind, you're stuck. You can wait for a breeze; you can get the boats out and row, pulling "Endeavour" along.



MEN DESERT

If you don't get them back, you may find more trying it. If you have half the crew deserting, you are going to have trouble sailing the ship easily. It is up to you, but you have to keep in mind the effect on the rest of the men.



RUN OUT OF WATER

If this happens, you have just killed yourselves through bad planning.



DISEASE BREAKS OUT

Try to cure it; try to stop it spreading (vinegar was believed to help remove the chance of infection). Keep sailing as far as possible. If you reach a minimum of 15 able crew, you can still do this: less than that and it's not possible to sail with any idea of your course. You will be in **BIG TROUBLE**.

And perhaps your biggest enemy:

SCURVY

THE SCOURGE OF THE SEA

WHAT HAPPENS TO YOU IF YOU'VE GOT IT:

1. Loss of strength, depression.
2. Yellowish skin, sunken eyes, tender gums, sore muscles.
3. Teeth fall out, and bruises (big and bad) appear without cause.
4. Eyesight gets bad, particularly at night (although this stage doesn't happen to everyone).
5. Exhaustion, diarrhoea, heart and kidney problems.
6. Death (caused by any or all of 5).

If a ship's crew spent more than 12 months without much fresh food, it was common for a third of the men to die this way.

It takes weeks without fresh fruit and vegetables for the first symptoms to appear. Even bad cases (up to stage 5) can be cured quickly with enough fresh vegies. (Of course, your teeth won't grow back.)

WHAT WAS KNOWN ABOUT IT IN 1768:

All experienced sailors realised that it was their diet that had something to do with it. This didn't mean the problem was solved; how do you KEEP vegetables and fruit for long enough on a voyage that will take years? They tried all sorts of preserved fruit and pickled vegetables, but none worked — except citrus juice that HADN'T been boiled into a syrup. This had been discovered, but it was so new that Cook didn't hear about it before he left.

Instead he took sauerkraut, portable soup, a malt drink, and stopped as often as he could to collect wild celery and trade for fruit and vegetables with any friendly natives anywhere.

WHAT CAUSES IT?

NOT ENOUGH VITAMIN C. It exists in plenty in almost every plant that we can eat. It is destroyed a lot by cooking, and by being kept for long periods (unless frozen, or even canned). As neither of these methods are available to you in 1768, **DON'T FORGET TO GET SOME GREENS!**

LONGITUDE — THE FINAL KEY

IF YOU DON'T KNOW IT, YOU DON'T KNOW WHERE YOU ARE — SO
HOW CAN YOU GET TO WHERE YOU WANT TO BE?

THE PROBLEM

It's 1768 and you're in the mid Atlantic. All you can see is sea and sky. You know that the sun and stars can tell you how far north or south you are if you have a device for measuring the height of heavenly bodies above the horizon (a quadrant or sextant), a Nautical Almanac, calm seas and clear skies. So you've got **LATITUDE**: your distance from the equator. **But how do you tell your LONGITUDE — your distance east or west from Greenwich in England (which is marked as 0° longitude)? That's the PROBLEM.** In theory it was simply the difference in **TIME** between your position and Greenwich. Measure it accurately and you have **the final key** — you will know **exactly where you are**.

"THE CENTURION"

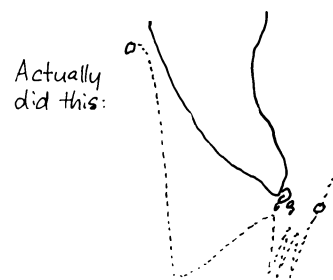
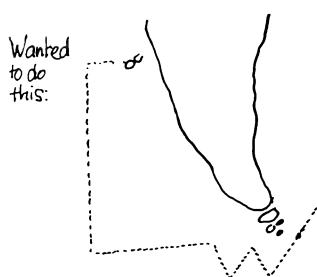
WHY IT MATTERED SO MUCH

In April 1741 this ship was well south of Cape Horn and heading west into the Pacific. Royal Navy, Captain George Anson — intent on circumnavigating the world, and seeing what they could see.

When by all estimates they had sailed far enough west to be well past the Horn, Anson turned North . . . only to find he wasn't past it at all (an unsuspected current). Scurvy had broken out, and his crew were dying like flies. He had to get them to somewhere safe; he chose Juan Fernandez (an island off Peru). Got round the Horn at last, but his men were dying at the rate of 2 a day. Should he sail far enough west before turning north to be certain of turning east in the right latitude — or should he rely on dead reckoning, save precious time, and head north straight for it? No doubt the sight of his desperately ill crew helped him choose — the latter. In the right latitude, 35°S . . . no island. East or West? It was just a guess. For 1½ days sailed West; no island. So went East . . . no island: but the coast of Peru — **NOTHING THERE**. West again, and found it — only hours over the horizon from where he had first turned back, but days and days later than he'd hoped.

"Centurion" kept going, and returned, laden with Spanish booty to a hero's welcome — in spite of the fact that 6 ships and 1,995 men set out, and only 1 ship and 904 men returned. Most of them died of scurvy: some in wrecks.

Although this was particularly disastrous, it was usual for ⅓ of the crew to die of scurvy on long voyages. And it was usual for navigators to make mistakes. Anson was not held responsible — indeed, he ended up an Admiral, and First Lord of the Admiralty.



A SOLUTION?
FINDING LONGITUDE MID C18

**LUNAR
DISTANCES**

The theory was simply to use the MOON as a clock as it moved across the star background. The idea had been suggested at the beginning of the C16 but it took more than two centuries for scientific knowledge to catch up with the theory. Even the great Isaac Newton found it hard. '... the only problem that ever made my head ache', he said about trying to work out the future motion of the moon.

By 1755 lunar prediction tables were available to convert observations of heights and distances between the moon and certain stars into the time at Greenwich (0° LONGITUDE). Since LONGITUDE is the difference in time between two places, you could compare this Greenwich time (G.M.T.) with your local time obtained through observations of the sun. The time difference — when converted to degrees ($1 \text{ hour} = 15^{\circ}$) is your LONGITUDE.

Sounds easy ... for an astronomer or mathematician on dry land. The calculations were too long and complicated for the average sailor ... Enter Astronomer Royal Nevil Maskelyne — no sailor but great at maths. He realized that it was necessary for the difficult parts of the calculations to be worked ashore by experts and published in advance.

When the Endeavour left England in 1768, Cook had on board Maskelyne's first two almanacs for 1768 and 1769. So with the help of Green, the astronomer (Lunars were a real team effort) and the sextant — newly developed for accurately measuring the large angles often found between the moon and the selected star — Cook was able to use Maskelyne's almanac to fix his LONGITUDE to an acceptable degree of accuracy.

TRADITIONAL

DEAD RECKONING . . .

You ESTIMATE how far you've gone based on

- The compass course you are steering
- The speed of your ship (LOG)
- The effects of winds, currents and leeway (OBSERVATION)

Lots of guess work involved . . . errors could build up on a long voyage and result in disaster. (e.g. Dutch wrecks on the West Coast of Australia).

... AND THE ANSWER

COMPETITION £20,000 REWARD

£20 a year was enough to raise 10 kids on. For 50 years the offer stood with no-one coming close to winning it. 'Any practical and useful means of measuring LONGITUDE' £20,000 if within 30 miles of accuracy, £15,000 for 40 miles and £10,000 for 60 miles. Lunar distances still took too long, were difficult to observe accurately and then to calculate and impossible to measure in rough weather. All sorts of crazy ideas were proposed and several inventions which didn't work. TIME MEASUREMENT was the key — a very accurate clock so you could carry Greenwich time permanently on board. But no-one could make one unaffected by motion, temperature, humidity or changes in gravity.

AND . . . THE WINNER: JOHN HARRISON!

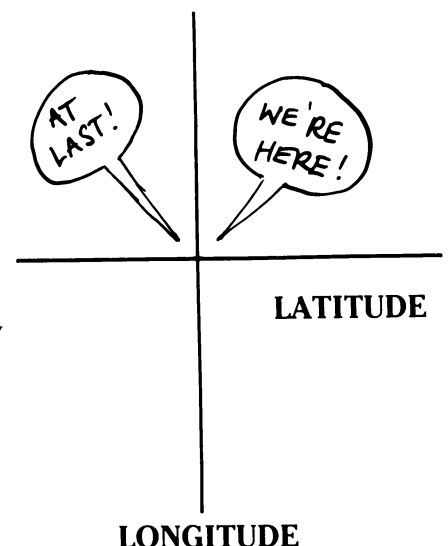
Cook could have taken Harrison's marvellous chronometer with him if it hadn't been for the intellectual conundrums caused by a mere CARPENTER managing to invent, design, and MAKE a clock that, on its first test, was accurate to within a *mile*. They just couldn't believe it. The mechanical problems were so great that Isaac Newton himself had been confounded. And a CARPENTER! Harrison did eventually get the money — at the age of 80, and then only because the king interfered. He had invented the first one when he was 41, in 1735. "Number 4", the most famous (Cook took a copy of it on his next voyage, and proved its value forever) could be held in your hand; it was tested in 1761, again in 1764. Harrison by now over 70, sight failing . . . and his clocks were definitely the answer. Many lives were saved by his agile mind and skilful hands. Cook thought his "No 4" was wonderful, and abandoned lunars except as checks on the watch.

HOW MODERN SAILORS FIX POSITIONS

Harrison's solution — the clock — is still useful. Greenwich time is always on board and now, with frequent radio time signals (the beeps you hear on the radio around news time) you can make sure the clock is accurate.

More often they use —

1. SATELLITE NAVIGATION (SAT/NAV). The concept dates back to 1957 and the first launch of an artificial satellite — Russia's "Sputnik". In general use for the last 15–20 years. Quick and accurate. Will give a fix approximately every 2 hours.
2. G.P.S. — Global Positioning System. A new satellite system put up by the space shuttle ultimately will be accurate to within metres. Used for surveys. Will give a fix every 6 seconds.



THE ENDEAVOURS

OLD

Lifespan: 30 years. **Cost, 1768: £9,000 (purchase and refit)**

PLANS

3 sets, none complete. Originally “just another collier”, with no real plans at all, she was built in a year — year and a half, by men who didn’t need a plan anyway . . . they just KNEW how to do it, given the job she was to do and the size she was to be. The Navy drew the 3 sets of “lines” — one before they bought her, one while she was being altered, and one just after she was finished.

MATERIALS:

TIMBER:

Solid oak frames, stem, stern, planks and deck beams. Fir (pine) for decks, masts and yards. Keel, elm.

FASTENERS:

Mostly, friction. No screws, no glue, a few nuts and bolts.

Square bolts driven into round holes, (iron, NOT steel) gripped tight as they corroded.

Planked sides held on with tree-nails (pronounced ‘trunnels’); long bits of round wood of various lengths hammered in.

NEW

Cost, 1988: \$10,000,000 (about) Lifespan: 200 years.

PLANS

David White (naval architect in charge of the design) knows as much as anybody about this kind of ship; every millimetre has been drawn (in many cases, actual size) to make sure that it’s right BEFORE it’s built.

MATERIALS:

TIMBER:

Large pieces of oak being VERY rare and very expensive these days, she’s mostly West Australian jarrah. The very large pieces (frames) are laminated jarrah. 15% heavier than oak; borers don’t like it as much.

Oregon for planks above the waterline (topside), decks, masts and yards.

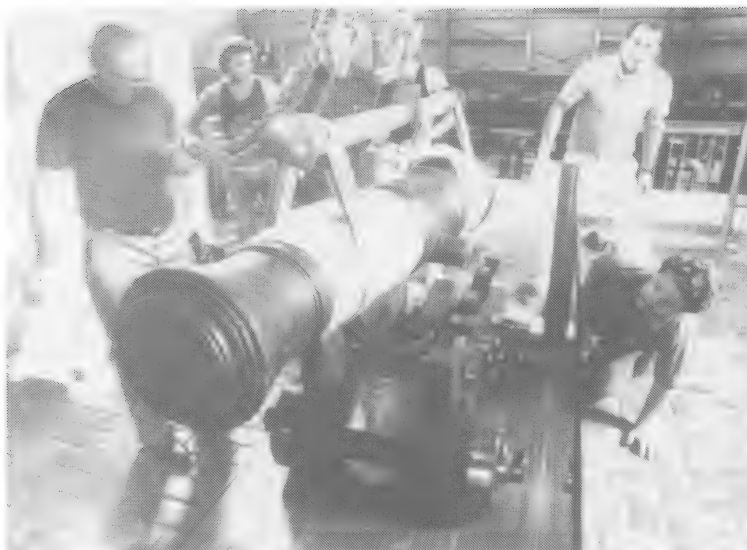
Finished with she-oak, tuart and karri — all W. A. hardwoods.

FASTENERS:

Waterproof glue, galvanised steel bolts, and other corrosion resistant fittings — so’s she’ll stay the same shape for MUCH longer. These will NOT be visible.

One of the six cannon from the original Endeavour. Recovered from the ocean near Cooktown (Qld) in 1969 by an American expedition. Restored by the Australian Government and presented to the people of Australia by John Gorton in 1970.

This picture shows the cannon being lowered into position in the foyer of the Endeavour replica shed where it will remain until mid 1989 when it will go to the Australian Maritime Museum in Sydney.

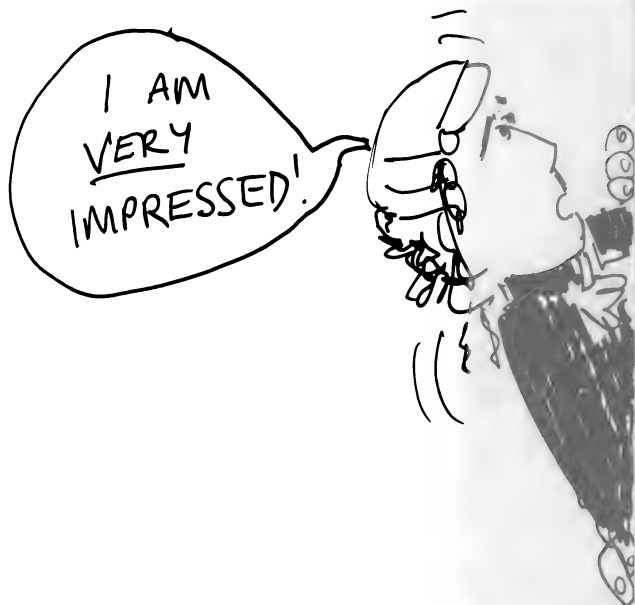


OLD

BLOCKS:

Single pieces of hand carved oak or elm; sheaves (the pulley inside) of LIGNUM VITAE (*very* hard wood that has a self lubricating quality, and won't split along its grain)

600 of these all together



Robin Hicks, RIGGER/BLOCK MAKER, cutting a she-oak block on a bandsaw.

PROTECTION:

Salt. (Would have rotted away in fresh water.) Woodwork above waterline "payed" — varnished with boiled pine resin — and standing rigging coated in stockholm tar.

Bottom was covered with a second skin of thin planks studded with large-headed nails; sandwiched between this and the hull was a mix of oakum, tar, sheep manure and old rope. All this to slow down borers.

The pinnacle had a coat of white lead (paint) — Cook noted it survived much better than the other 2 ship's boats which were just payed.

NEW

BLOCKS:

Laminated she-oak; sheaves are ertalon (black nylon, hardwearing) held there with stainless steel pins. Look the same, but work better and last longer. (Cook would be most impressed.)



PROTECTION:

All internal timber treated with wood preservatives.

Hull below waterline, and second skin of jarrah coated with anti fouling paint (so the anti borer sandwich won't be needed).

Outside above water surfaces will look right but modern wood preservatives underneath will keep the ravages of sun and sea at bay.

OLD

SAILS AND RIGGING:

Handsewn flax-canvas. Hemp rope at edges (2 new sets of sails and the old ones that came with her). They had to be perfectly dry when folded, or they'd rot.

All rigging was hemp of various sizes; no wire. 25 kilometres required.

NEW

SAILS AND RIGGING:

Machine sewn, but hand finished with traditional tools (fids, palm, needle and thread). DURADON. Looks like flax canvas, but doesn't rot.

All rigging synthetic hemp (also doesn't rot).



SAILMAKER'S MATE Scott Anderson at work on a hammock surrounded by some of the displays in the sail-loft and the tools of his trade.

TOOLS:

All hand tools; hammers, chisels, saws and ADZE — which was used with great skill much as we now use a wood plane. (An adze is a handle fitted to a sharp edged, slightly curved blade — axe sized.) Holes were drilled using augers wrought by a blacksmith; no metal machining technology yet, so no drill bits as we know them.

Heavy timbers winched into place with rope, pulley and capstan; wooden scaffolding.

Everything measured by eye and string.

TOOLS:

Cranes, power tools and other modern labour savers, of course; but adzes, and caulking tools (filling seams between planks so they are water-tight) are being used where modern tools don't help to get it how it *was*.

A blacksmith will make all the iron fittings for the masts, yards, deck and interior; so a forge is still vital; and the methods used then are still skills available now.

The Endeavour Replica is being built in a shed — whereas the original was built out in the open. Working in the rain can't have been much fun. It's highly unlikely that anything short of a real storm would have stopped work then; if it had, with English weather, it would have paid them to build a shed too — and they didn't!

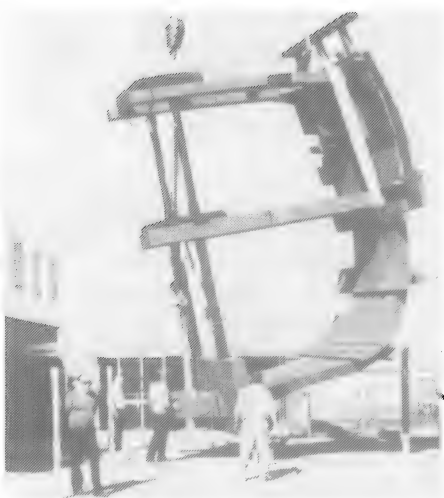
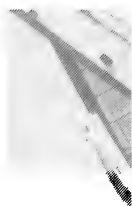
OLD

BUILDING:

Lots of men, and slow, painstaking work. Ship building, being a highly skilled occupation, has a long tradition of proud workmanship; these men knew that lives depended on their skill, and took great care with what they did.

Details, like height of masts, sometimes depended on what timber was available in the yard.

The time it took depended on the number of men available, which depended on how much building was happening in the other yards nearby. Hence 12 to 18 months as a good estimate of how long it took.



"TRIAL SECTION" BEING LOWERED INTO POSITION OUTSIDE THE MEWS ROAD SHIP SHED

This structure represents one half of a midship section of the Endeavour Replica. It was built as a test piece early in the project and won't be part of the finished ship. Represents 1/15th of length, weighs 10.5 tonnes and shows construction methods used on actual ship. Not fully planked so framing visible.

NEW

BUILDING:

A trial section (a middle piece) was built first to test ideas, and authenticity of different techniques — as well as the methods themselves.

The site is less crowded, but much noisier; everyone involved can (and does) read plans, and needs one . . . this is not something you build every day.

There's a lot of discussing; an air of excitement that probably wasn't there in Whitby, 1764.



The "Trial Section" being manufactured at Steve Ward's boat shed, Henderson, W.A.

OLD

ANCHORS:

Cooktown Museum has one that Cook jettisoned during their near miss with the Barrier Reef. Made of heated iron rods hammered together.

ENGINES:

What? James Watt's *steam* engine isn't common knowledge yet!

Jan Jensen, BLACKSMITH, making a "dog" - a metal rod spiked at both ends and used in the old days as a clamp.



NEW

ANCHORS:

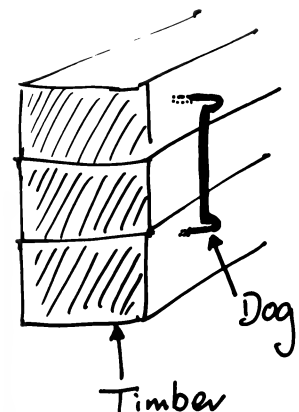
Four, just the same as the originals, but cast in steel. No modern anchoring equipment will be used — and the capstan (to raise the anchor) will be operated by hand.

ENGINES:

2 × 350 h.p. diesel engines (have to, to pass Dept. of Transport Safety regulations and be insured). Which is actually very sensible, if not exactly in the spirit of the thing.

They are:

1. Hidden
2. Very quiet
3. Underwater exhausts



OLD

NAVIGATION AIDS:

Lead,
Latitude, and and sextant,
Lookout! and Log.

The log:
to figure out how fast the ship is sailing

Time:

With a $\frac{1}{2}$ minute sand glass; count the number of knots carried overboard in that time = no. of nautical miles or knots an hour.

The lead:

To measure the depth of the water (vital close to shore). Heave the lead far ahead, so that you can feel it on the ocean floor when you are directly over it. Another knotted string tells your depth. Quite an art to doing this accurately.

Latitude and Sextant — see Navigation

CREW ACCOMMODATION:

Very cramped; the officers and Banks' party were crammed into tiny cabins — where they had a bed each, but not much else. The crew, Banks' servants, and the Marines had to sling hammocks about 35 cm apart. 2 watches means $\frac{1}{2}$ of you work, $\frac{1}{2}$ sleep, so only $\frac{1}{2}$ 'tween decks at a time, but all trying to sleep; 3 watches means $\frac{1}{3}$ sleep, $\frac{1}{3}$ work, and $\frac{1}{3}$ have some time to themselves. Preferably on deck!

Bathroom — none (washing was thought unhealthy).

Toilets — over the side, away from the wind — Officers and Gentlemen at the stern, crew to the bow, or "heads".

COOKING and LIGHTING:

Stove was a wood fired brick one — fuel for it almost as vital as fresh water.

Lights — mostly candles swinging in weighted sockets, of polished brass and some oil lamps.

NEW

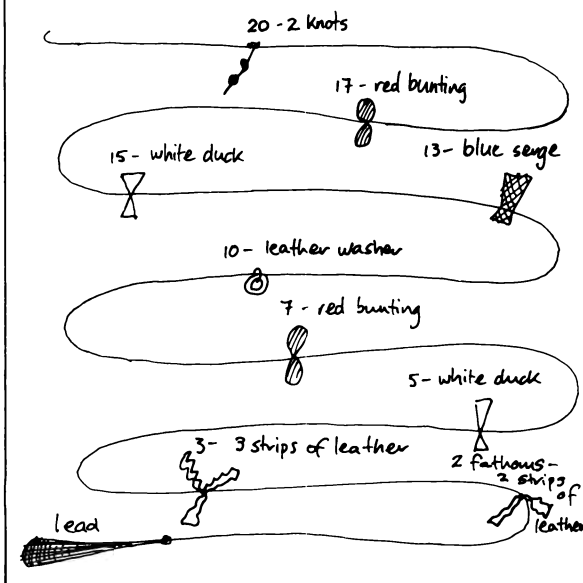
NAVIGATION AIDS:

All that, plus radar — the seas, and harbours, being a bit more crowded, it will be useful in avoiding collisions.

- The log — a sonar one — mounted so it's not visible;
- The lead — just this, no depth sounders.
- And radio.

THE LEAD:

So depth can be read in the dark, the knots in the lead line are coded so you can read by texture: (measured in fathoms)



CREW ACCOMMODATION:

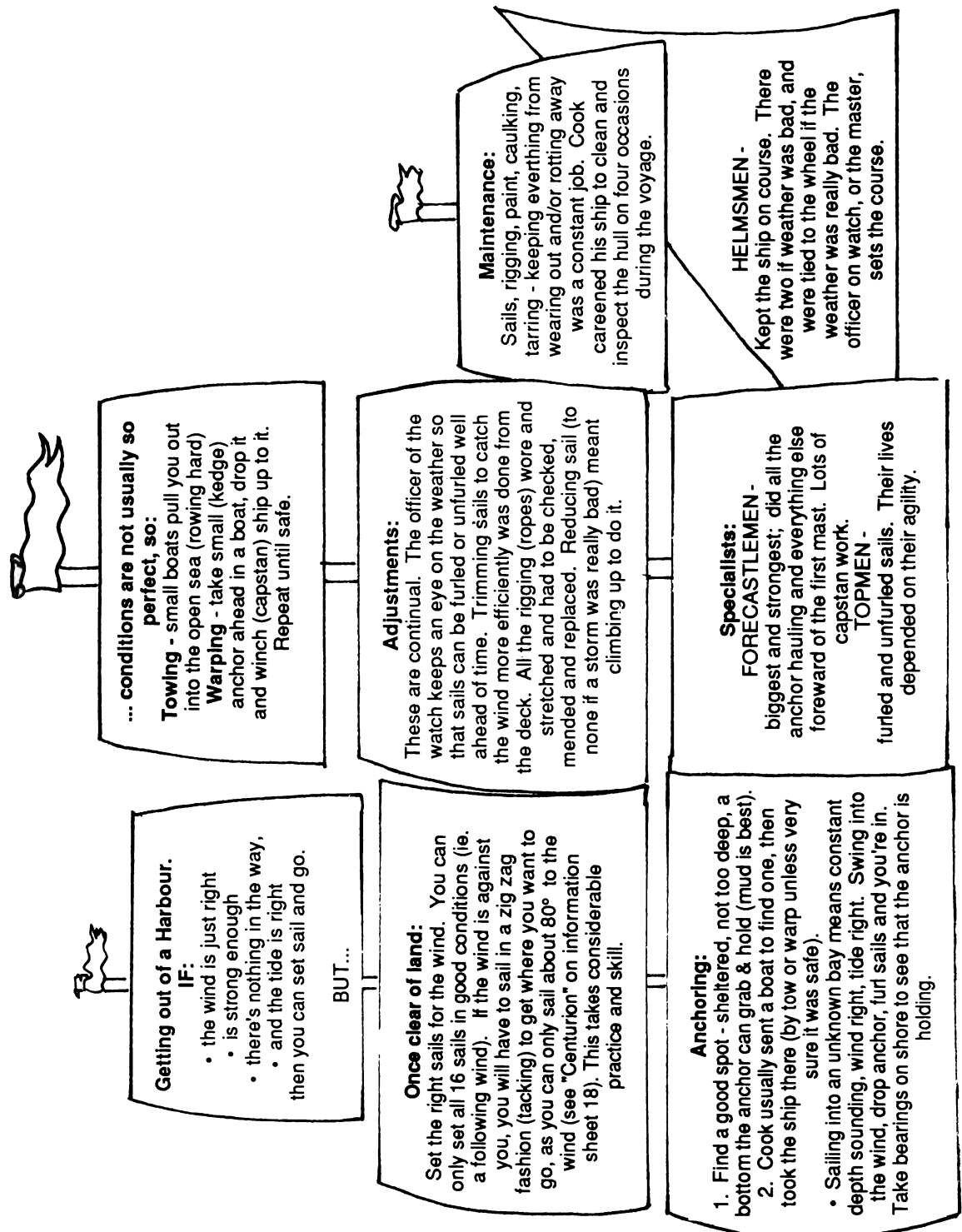
Modern toilet facilities, and showers — with hot water run off the engines. Otherwise, as traditional as possible.

COOKING AND LIGHTING:

This will be as traditional as safety allows.

Lights will actually be electric "lanterns".

SAILING



MADEIRA

Actually 2 islands and 2 groups of uninhabited rocks, they are the tops of old volcanoes rising out of the sea from the ocean floor. Funchal, the port is a bustling place, with ships of all nations (except Spain) calling in on their way to and from the East Indies, India, and South and East Africa and South America. It's a place that does well from supplying ships for voyages, no questions asked. Popular especially for wine — Cook took 3000 gallons on board.

Notes on the Royal Navy are accepted here (so you don't need cash); English is understood enough to get you by, although Portuguese is what's spoken. So you can get anything you need here, and bill it to the Navy.

If anyone wants to desert, this is the place to do it; there are always enough ships in Funchal Harbour (glad of an extra hand) to make it relatively easy to disappear without trace. (None of them are venturing into parts unknown, so they might seem safer.)

CAPE HORN — TIERRA DEL FUEGO

This passage into the Pacific was so dangerous (it still is) that the Panama Canal was dug at VAST expense in order to avoid it. You will need to land somewhere here for water, wood, and whatever local fresh greens you can find; it's inhabited by hardy Indians who are still surprised by the sight of European ships, but are happy to trade a little food (mostly fish) for beads and hatchets and can show you what's edible and what's not.

Bitingly cold at any time of the year (note you and Cook are there in summer) the winds come constantly from the west, so most sailors just head South West until they are sure they are past it, and then veer N.W. (and hope they are right). If you are lucky, the weather won't be so bad that you get blown all over the place and lose all clues as to where you are.

RIO DE JANEIRO

Sub-tropical, the beautiful harbour is surrounded by peaks of lush green, and the town itself is well established. The inevitable mixture of wealth (the planters) and poverty (down and outers), it's a Portuguese colony that's making money out of gold from the inland, sugar and a bit of cattle and tobacco raising. Sugar is the most important. Because the Spanish, Dutch and French have all had a go at taking over in the last 60 years here, the colonists (many of whom have been here for generations —) are understandably wary of strangers. Unlike Madeira, they don't need the trade. However, if you've got gold to pay with, you can get any necessary supplies.

TAHITI

Easy to identify after all the low lying coral atolls you've probably passed on the way, because it's a spectacular mountain rising out of the sea.

Tropical; coral sand beaches, jungly hinterland with villages and gardens dotted along the coast and among the hills — no wonder Cook's crew called it Paradise (Banks did too). The Tahitians have seen at least 2 ships before — *Dolphin*, 2 years ago, and another, probably Spanish, about 20 years before that. They treat new arrivals as honoured guests, willingly provide all kinds of food, entertainment, and company, and are obviously intellectually intrigued by everything to do with these strange, smelly, womenless group of visitors. There is a big problem with ownership — the locals took all sorts of things without asking, from clothes to guns and an astronomical quadrant.

Cook arrived with 7 weeks to spare before the transit, which meant everyone had enough time to enjoy the place and the people. Many learned some Tahitian (Banks did) and tried to cross the culture gap.

QUEEN CHARLOTTE SOUND

Famous because Cook was to return here on subsequent voyages, this time Endeavour stopped here twice — Ship's Cove and Admiralty Cove — while he circumnavigated N.Z.'s 2 main islands and charted them.

Containing several sheltered coves, and being in Cook's Strait it was a safe central base.

The shore was solid forest, with an abundance of water, wood, wild celery and scurvy grass, — and fish. Birds too.

There was a Maori village of 3–400 people in Ship's Cove; probably a seasonal settlement as there were no gardens.

Initially hostile, but friendly once trading was established, these Maoris were cannibals by all European accounts.

BOTANY BAY

Big and sheltered, although very shallow at one end, with mudflats, mangroves, and swamp there; Cook's party got enough water for their needs, but had to dig in the sandy creek bed to do it. The shore was low and level, with shrubs, palms, and larger trees (these ALL new species to Banks and Solander). Plentiful fish and shellfish, pelicans, water birds, parrots and cockatoos.

The inhabitants made it very clear that they wanted the ship and her company to LEAVE; nor were they at all interested in the presents they were offered. However, they did not try to make them go; retreated when shot at.

ENDEAVOUR RIVER

With a hole in your ship, you'll land anywhere that'll give you a chance to fix it up. There is a sand bar at the entrance which Cook almost got stuck on getting in; but it's sheltered, and the beach was the right sort for beaching her bows at least and mending the damage there. Lots of wood, and water; turtle, fish and some shellfish, pigeons, palm cabbages, wild plantains and taro, plus a couple of kangaroos — all of which vary the diet. This was the first recorded European contact with kangaroos.

It took 3 weeks to make contact with any Aborigines here; they demonstrated what they thought about the company's feasting on turtle by trying to take a couple back; unsuccessful, they then set fire to the grass on the beach, and the woods beyond.

Getting out of the inlet was tricky too; onshore winds had them trapped for days. Cook prepared to warp his ship out as soon as a calm came and got out that way.

BATAVIA

The "Queen of the East" according to her Dutch inhabitants — Batavia STANK. An earthquake had turned the surrounding area into a swamp 70 years before, so malaria was a constant problem. The place was filthy, and had a death rate of 50,000 people a year.

BUT — it also had shipyards, and was the only possible place to go that was capable of really repairing Endeavour. Cook was impressed with their workmanship. He said in his Journal "... I do not believe that there is a Marine Yard in the world where work is done with more alertness ..."

The Dutch weren't very fond of British Naval vessels, but would grudgingly help, for a price that was exorbitant (but were prepared to *lend* Cook the money).

Quinine was recognised as a treatment for malaria, and was probably available — otherwise it would have killed more people than it did, out of Cook's crew.

CAPETOWN

At first sight a barren, hilly place, nonetheless its healthy climate and clean streets must have been a welcome sight to Endeavour. Cook rented quarters ashore for everybody, and waited for the sick to get well. They were in a terrible state; 29 terribly ill. All but 3 recovered. The South African Colony was very hospitable, and well able to provide them with all that they needed.

LONDON: HOME!

The papers of the time spared a paragraph to note their safe return; presumably their families gave them a better welcome. Nobody was permitted ashore until Cook was sure his journals were safe with the Admiralty; and everyone had to swear not to tell the papers where they had been until notified that it was no longer an official secret. THEN everyone could go home; hopefully all was well; after 3 years at sea anything could have happened, and probably did.

About 1/3 of the crew caught gonorrhoea in Tahiti — but no-one mentions what happened about that.

EXPLORATION — THEN AND NOW

1768

THE UNEXPLORED

For Europeans: — the South Pacific, most of Australia; the Poles; inland China, S.E. Asia, Africa; much of Canada, Alaska; vast reaches of South America.

Let's compare: The South Pacific in a wooden ship, 1768 . . .

COMMUNICATION WITH BASE

3 letters to England; none from England.

TECHNOLOGY

State of the art equipment except for Harrison's clock

WHO GOES, AND WHY

Cook, because he was the best (most likely to make it back).

Banks and Co: because *he* wanted to, and paid them well.

The crew: because their names came up on the list (except for a few, who wanted to sail with Cook — i.e. volunteered).

MEDIA COVERAGE

Departure and return noted in newspapers (NB most people can't read). IF you return with something sensational — strange creatures, plants, and stories that'll capture the imagination, more news. Otherwise, that's it.

If the ship had sunk off Cape Horn, say, nobody would ever know; they had given Endeavour up for lost a few times in the papers before she came home.

1988

THE UNEXPLORED

Every centimetre *may* not have actually been walked on, but it has definitely been photographed, surveyed, and analysed — by satellite if nothing else.

Our last frontier is SPACE — off planet exploration.

. . . with the solar system in modern space craft, 1988.

COMMUNICATION WITH BASE

24 hours a day radio and T.V. contact, with back-ups in case of malfunction.

TECHNOLOGY

State of the art equipment, unless the 'other side' has managed to still keep it secret.

WHO GOES, AND WHY

Carefully selected, highly trained volunteers — chosen from among 1000s who apply; must be physically fit, mentally stable, no physical defects whatsoever, be under 40 and over 25, love your country — and want to explore space desperately. In some cases unmanned instruments do the discovery.

MEDIA COVERAGE

Only if disaster is imminent, OR something is done for the first time, OR a disaster occurs. If any of these 3 happen, then we have live TV coverage of it happening, radio and newspaper reports, and action replays; and interviews before, during, and after the event.

1768

PURPOSE

Crew: Just following orders OR (Banks) for the adventure OR (Cook) for the recognition of a job very well done.

Admiralty: To get there first, in case “there” is valuable — either as a market or as a source of raw materials.

EXPECTATIONS

In unexplored areas — would not have been surprised by ANYTHING.

COSTS

Minimal — not much more than keeping an ordinary ship at sea.

RISKS

Possibly your life; almost certainly your health; shipwreck — surviving, but marooned forever; although not dwelt upon, they were ever present dangers. Even by the mid 1800s one in ten British ships were lost at sea and one in twenty sailors died at sea.

1988

PURPOSE

ASTRONAUTS: “To boldly go where no man has gone before” (STAR TREK)

SPACE RACE/COUNTRY: To get there first, in case “there” is valuable — either militarily or actually; to demonstrate superior technology; to focus the nation on their success.

EXPECTATIONS

Expect a very predictable trip — with the norm being it all goes exactly as planned. There are, as yet, no REAL unknowns out there — at least, not ones who might eat you, wreck your ship, or give you presents and treat you like a God. There isn’t the same excitement about it, and there won’t be until we are exploring other worlds.

COSTS

Astronomical!

RISKS

As “Challenger” taught the world, the danger is very definitely there, but it is certainly made as unlikely as possible.

The biggest difference is that exploring this planet once meant travelling in common ways eg. by horse or by boat. You just went further than people had gone before. So, in a funny sort of way, it was much easier for everyone else to imagine, and share. Space exploration, on the other hand, is so technically difficult, requires so many back-up resources and money and basically consists of so much unexciting orbiting that it’s much harder for the people back home to get excited about it.

1768–69

August 1768
sails to Plymouth from Gallion's Reach

August 1768
Captain James Cook receives his secret orders

August 1768
Banks & co. sent for; all is ready

August 1768
* winds wrong for departure and cabins still being finished. All aboard

August 1768
left Plymouth

August 1768
STORM: chickens & boat lost

August 1768
reach MADEIRA

August 1768
*A. Weir drowned while anchoring

September 1768
Cook's son Joseph born

September 1768
SET OFF

September 1768
MADEIRA

[illegible][illegible]

January 1769																																												
															LE MAIRE STRAITS					BAY OF GOOD SUCCESS					Water, wood & scurvy grass																			
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
															CHRISTMAS. Fair weather, so well celebrated by everybody back to 2 watches cold weather gear issued: thick wool jackets & trousers tide pushes them back 3 times Tierra del Fuego 2 of Banks servants freeze to death in snow Sail SW																													

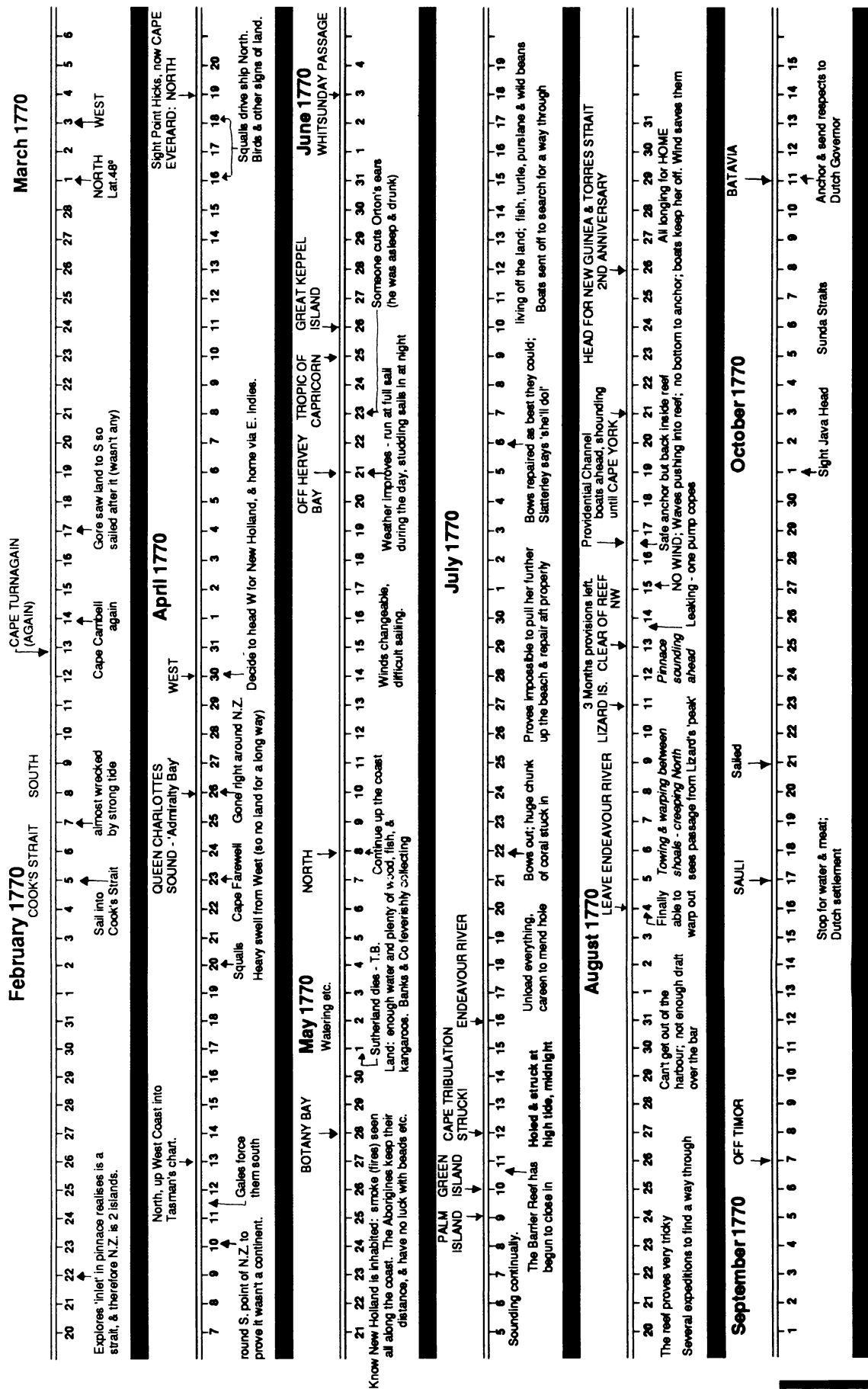
March 1769

[illegible]

1769-70

Purchasers may photocopy this page for classroom purposes

1770



November 1770



FAMILIES

WHO WAITED, IN HOPE AND DREAD, AS THE 2 YEARS STRETCHED INTO THREE?

Mothers? Fathers, sisters, brothers? Wives and children? Sweethearts? . . .

Trying to find out about this is a good lesson in how History works. If it didn't get written down, it didn't happen — as far as we know, that is.

The usual absence at sea was 6 months at most.

This voyage was expected to take 2 years — it took 3.

ELIZABETH

She married James Cook when she was 21, he 34. Most of what we know of her is a list of dates . . . births, deaths, and marriage; this because she carefully destroyed everything that would invade her privacy if made public after her death. So no letters, diaries, bills, etc. survived her.

For the 17 years they were married, James was at sea for ***all but 3 years***.

She had six children, but 2 little boys died as babies and her only daughter at 4. The Captain was away for all these tragedies. She was only 38 when he was killed in Hawaii but it took a year for the news to reach her. She mourned alone in their room for 3 days without food or drink. (Think about that year . . .)

She lived on alone . . . her youngest, Hugh, died of fever at 17; the two oldest died at sea — Nat drowned when his ship went down, and James was mysteriously killed in action. She died at the incredible age of 93, having outlived her whole family by decades.

She got a pension of £300 p.a. from the Admiralty (the usual £200 for a Captain's widow, plus £100 extra requested personally by the King) as well as royalties from Cook's published journals. This meant she could live very comfortably. At one stage she even kept a footman.

She ended her days a rather daunting old lady, known for her firm opinions, and impatience with the frivolous social life she could have entered. Respected but not a good friend to anyone it seems. As to what she felt and thought . . . we can only imagine.

The 3 names we know are Elizabeth Cook, Sarah Banks, and Harriet Blasset and none of them are typical.

SARAH

Probably because they only had each other Joseph Banks and his sister were close. They had money and enjoyed spending it. Banks wrote to her on the 3 occasions he was able (Rio, Batavia, and Capetown) — long, detailed letters which she re-wrote for publication in the newspapers, in particular when they had been reporting Endeavour as given up for lost.

HARRIET

She became engaged to Mr. Banks before he left and then waited for his return. Who knows what that was like for her . . . sewing her trousseau, and wondering. When she saw him again, he had changed his mind. She was given £5000 in recompense.

AND THE REST?

It's impossible to believe that 94 men can leave on a voyage into the unknown with 92 having nobody at home worrying about them.

The trouble is, that out of them all, only Cook and Banks were of enough interest for written records to be KEPT and as you can see even they are a bit sketchy.

So . . . with no individual details, what can we PRESUME? Let's look at what we KNOW: —————→

SOME GUESSES ABOUT THEIR FAMILIES

PARENTS

In a time where 1 out of every 4 children died and child-birth was risky (because NOTHING was clean, infections were frequent).

Those children who *did* survive would be just as loved as we are today.

Most ordinary sailors would have come from poor families. A son going to sea certainly meant one less mouth to feed but such a dangerous vocation *must* have worried many parents (if they were still alive to worry).

As most of *Endeavour's* crew were under 25 many of them must have had parents, not only living, but aware of the perils of a long voyage (it was usual for $\frac{1}{10}$ of the crew to die of scurvy, just for a start).

Those lucky ones who survived this voyage and had these worried people to go home to, would have done just that as soon as they could.

The midshipmen were little more than boys with middle-class families (they had to be to afford to educate their sons and buy them their commission). Often there was a tradition of sea-faring in the family.



WIVES AND CHILDREN

Although only the Captain was on record as a married dad, it's hard to believe he was the *only* one.

If anybody else had such responsibilities, they apparently took them lightly (no evidence of financial support). It's highly unlikely that the wives and children of these men had an easy time of it. The navy only sent wages to them if their husbands organised them to do it and took no other responsibility for supporting families. There was **no** financial help (pensions, dole, etc.). The local parishes all had "Workhouses" — horrible places for the totally destitute. Nobody went there if they had ANY alternative. Possibilities were limited to sewing, washing, domestic help (servants would have to pay someone else to look after any children), or prostitution.

However these women managed to scrape a living it would have been tough.

SWEETHEARTS

The folksongs of the time are full of faithful/faithless girls (depending on which ones you choose) waiting for their true love who's gone to sea . . . just look at poor Harriet.

Sailors STILL have a reputation — "A girl in every port, but their heart in the sea" — and no doubt the men of Endeavour deserve that reputation as much as any.

The ports abounded with women who made a living out of temporary relationships — supported by the thousands of lonely men passing through. London, Plymouth, Portsmouth, and Chatham (all major Naval ports) had their share. A fairly hardened community, by all accounts, but presumably it existed because it was needed. And the songs tell the unwritten history . . .

*"My Johnny was a shoemaker,
And dearly he loved me;
My Johnny was a shoemaker
But now he's gone to sea . . .
And when he is a gallant captain bold,
He'll come home and marry me —
He'll come home and marry me."*

?

If your parents were dead; if your brothers and sisters had hard lives of their own; if you had no home to go to — what then? Collect your pay, go to the nearest pub, and blow it all, on rum, gambling, and women. (Until the next voyage; that's the picture.) Between 10–20% of sailors had incurable venereal diseases; their lives were hard, and average life expectancy was only 40. Accidents, scurvy, tropical fevers and agues, ships lost with all hands, and war with the American Colonies and the French. Not to mention the typhoid, influenza, cholera etc. you could die of at home.

The sea was definitely a man's world. We think of the adventure of exploration — but most of Cook's men may well have treated it as just another day. The difference between us and them is enormous — not just in time, but in opportunity; in what we are *aware* of — that their poverty, ignorance, hardship and CLASS completely denied them.

ON RECORD:

1. **Married Naval Men:** Less than 20%, and that includes land based jobs. Most sailors who were married were officers (or older).
Of these, only one in ten (2% of *all* Naval seamen) arranged for their wages to be sent to their families while they were at sea.
2. **Endeavour Crew:** While the officers were experienced the seamen were younger (and less experienced) than usual. Possibility here of being picked for either health or unattachedness. Most men of any occupation did not marry until their late twenties, particularly if their earnings weren't large. It appears nobody except Cook remitted his pay to *any* relative.
3. **Wages:**
Ordinary seamen: £11.7.6d per year.
Able Seaman: £14.12.6d per year.
Ploughmen: £4 per year.
Average income: £14 p.a.
You can see from this that sailor's pay wasn't too bad; and the Navy was more likely to actually give it to you than the Merchantmen.
Also, there was Bounty . . . a share in any spoils of war or exploration. In other words, anything of value you could legitimately trade for or capture was yours.
4. **Who went to sea?** In spite of all the oral tradition — songs, mostly — that deny it, the official version is that only men who wanted to, did. The “press gang” were only supposed to impress men into the king's service from the MERCHANT Navy — i.e., sailors already. Certain convicted criminals chose the Navy in preference to prison when given the choice. None of these were on “Endeavour” as far as we know. So: men to whom the Navy offered something, be it adventure, enough to eat, reasonable pay, or just somewhere and something to do. Unemployment meant you starved, begged, or stole, remember — and jobs were hard to come by if you had no schooling and/or no skills.
5. **Parents . . .** No schooling meant no writing or reading . . . so no letters, unless someone writes for you. Then someone has to read them at the other end. All this MUST have made it difficult to keep in touch with seafaring sons in those circumstances. Also, people only rarely lived to be very old . . . so many on “Endeavour” would have no parents living.
The literate on board (officers and “gentlemen”) wrote . . . but only 3 opportunities to send these letters arose. Clerks wrote letters for some who couldn't do it themselves . . .

IF IT HADN'T BEEN FOR CAPTAIN COOK . . .

SOME DISCUSSION POINTS

Would Australia be anything like it is?

How much later would a navigator with his ability to

i) map

ii) find his way, and

iii) keep his men alive

have appeared in Europe, and been sent off to see what there was to make money out of in the empty bits of a world map?

Would he have been English, French,

Dutch, Portuguese — or American?

(Think about the invention of an accurate chronometer, and what that was to mean.)

Is there any way you can think up, that the original Australians and New Zealanders could have prevented this colonisation?

If Cook had NOT mapped Australia's East Coast . . . what then? Or, if he had, but the near-miss on the Barrier Reef had been fatal?

Cook claimed Australia, and New Zealand, as British land "in the name of the King."

His orders specifically state that he could only do this with "permission and understanding of any native inhabitants." This he did not have, in either case. He did not even seek it. Yet the European legality of his claim was upheld, and both became British Colonies; no question was ever raised at the time as to the rights (if any) of the Maori and Aboriginal peoples. What precedents are there for this; why did it happen; and would 50 years later have made any difference?

Would 200 years later have made any difference? Is it conceivable that European invasion into the Pacific could have been delayed so long?

If the first colony in Australia had NOT been a convict settlement, what difference may that have made? (Look at New Zealand's colonial history.)

The first impact, in England, as a result of this voyage, was the wealth of specimens, paintings, and artifacts brought back by Banks and co. Banks' own enthusiasm for the natural wonders of each "new world" rubbed off on the rest of Endeavour's men; the SCIENTIFIC value of these discoveries was appreciated in Europe. Would the attitudes have been different if Banks and co. had NOT gone? (Remember, artists and botanists were not standard equipment on voyages of exploration before this!) Also, the fact that this voyage was illustrated meant that it captured popular imagination.

NAUTICAL BITS

BAR

A sand bank. Usually formed where water slows down and drops the sand that is being carried — such as the mouth of a river. Cook had to cross one of these at the mouth of the Endeavour River.

BILGES

This is the bottom of the ship inside the hull ... if you have a leak you will notice the water level rising in the bilges ...

CAREENING

The “6 month service.” ... Cook had four of them during the voyage. You beach the ship and heel it over so that you can clean and inspect the under water sections of the hull. Helps if there is a steeply sloping beach and a reasonable rise and fall of water level.

Repairs can be carried out at low tide and the ship can be refloated at high tide ...

FATHOM

Measurement of depths of sea or lengths of rope. Comes from the old English *FAEDM*, to embrace, and is the measurement across the outstretched arms of a man: approximately 6 feet. Now replaced by metres ...

FISH

As in to “fish” a spar: to repair by placing fish shaped timber either side of the damaged section and binding with lashing.

FORESTAY

Strong length of rope from the front of the ship to the fore or front mast ... holds it up.

FOTHERING

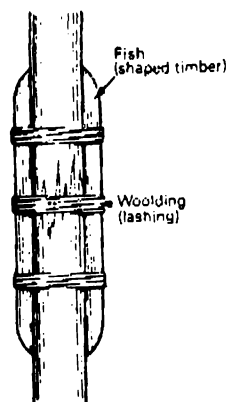
Using ropes to drag a sail under the hull to plug up a hole. The water pressure forces the sail into the hole and slows down the leak. Cook used this technique successfully when he hit the Great Barrier Reef.

HEAVE-TO

To use the sails to put the brakes on ... you can't actually stop because the water keeps moving ... but you slow right down. Normally done when the weather is too rough. Most sails are furled and the remaining ones are trimmed so that the ship makes as little progress as possible.

KNOTS

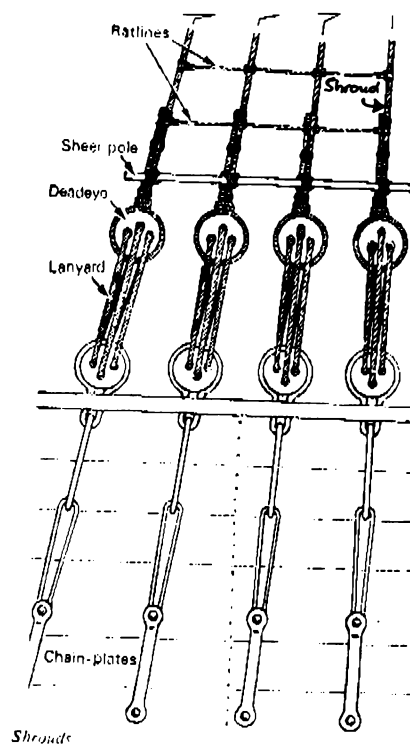
- The way to join pieces of rope together.
- Nautical miles per hour ... a measurement of speed ... in Cook's time calculated by using a log line (see sheet 15)



A fished spar

PORT

Left hand side of the ship when facing forward ... larboard side in Cook's day. Probably comes from Ladeboard as many of the old merchant ships had a loading or a lading port on their left hand side for cargo. Officially changed to Port in 1844 to avoid confusion with the similar sounding starboard.



RATLINE

Pronounced 'Ratlines'. A series of rope steps up the shrouds of a mast. The sailors used them to climb aloft.

RUNNING RIGGING

These are the ropes that are adjusted as the ship is sailing.

SEAMEN'S SLANG

- 1. Dead Horse** Period of work on board a ship for which seamen were paid in advance. The Endeavour crew were given two months wages before they sailed from Plymouth. Flogging a dead horse is to vainly expect to get extra work out of the ship's crew during the period for which they have already been paid.
- 2. Swinging the lead** To make it look like you are working ... as in swinging the lead before heaving it to take a sounding. If you just swing it you don't have to haul it up off the bottom.
- 3. No room to swing a cat** ... The cat-o-nine tails (a nine tailed whip) was used for inflicting corporal punishment at sea ... if there wasn't enough room to use it properly there was 'no room to swing a cat'.

SPAR

A general term for any wooden support used in rigging a ship such as the masts, yards, booms, gaffs etc.

SPRUNG

Refers to a spar cracking or splitting ... If you haven't a replacement you will have to "fish" it.

STANDING RIGGING

These are the ropes that are permanently fixed to the ship to keep the masts standing.

STARBOARD

Right hand side of the ship when facing forward ... Comes from Steerboard ... ancient mariners steered with an oar on the right hand side of the ship.

STIRRUPS

There are many agricultural names that appear on ships ... The stirrups hang below the yards at intervals to support the footropes. The sailors walk along the footropes while they are aloft working on the sails.

TEREDO

Ship worms that bore long cylindrical holes in the wood they then inhabit. Most prevalent in warmer waters and therefore a major concern for Cook as his voyage was heading into the tropics. The Endeavour had a sacrificial skin of thin planks closely nailed together to try and prevent the borers from attacking the main hull. They can now be controlled by anti-fouling paint being applied to the ship's hull beneath the water-line.

TILLER

Is the connection between the rudder and the steering wheel. Moving the wheel moves the tiller which moves the rudder which changes the direction of the ship ...

WEIGH ANCHOR

To pull it up ... you would probably get an idea of the weight while you are doing it!

YARDS

Large wooden spars crossing the masts of the ship horizontally from which square sails are set

Any further enquiries or information you have about things nautical relating to the Endeavour ...

Please contact:

The Education Unit
Endeavour Replica Project
Mews Road
Fremantle



Cook's Endeavour
ENRICHMENT IDEAS AND
ACTIVITIES

1. Prepared Activity Sheets — you can photo-copy.
2. Follow-up/Finish off ideas.
3. Reference List, with short description of their merits.
4. Nautical Novels, briefly reviewed.

PROVISIONS

Name _____

1. What do you eat in a week?

DAY	BREAKFAST	LUNCH	DINNER	SNACKS
SUN				
MON				
TUES				
WED				
THURS				
FRI				
SAT				

2. Count up the number of times you eat:

MEAT
VEGETABLES
BREAD/CEREALS RICE, PASTA, BISCUITS
FRUIT
SOMETHING SWEET

3. Put a circle around (or otherwise highlight) anything you could take on Endeavour in 1768.

4. What could you take instead of the things you haven't circled?

5. Make up an Endeavour menu for one week, using these.

PROVISIONS

Name _____

Meals on board were run on the naval tradition of alternate Meat Days and BANYAN (meatless) days, with Sunday meals made as special possible (with meat) under the circumstances.
A typical week’s menu would be:

Breakfast (every day) ● porridge: oatmeal, water, portable soup, and any vegetable available ● ship’s biscuit ● wine and water, or citrus syrup and water	Midday/Midwatch ● soup or thin stew, made with whatever was available — base was the portable soup ● ship’s biscuit ● citrus syrup and water ● beer, if any — only if recently acquired ● tot of rum or arrack	Dinner, Meat Day ● meat stew, pie, or other concoction ● ship’s biscuit ● bread, if flour available ● tot of rum, wine, or arrack
Extras Officers and gentlemen had tea (with goat’s milk). Everyone else made do with water whenever they were thirsty.	Dinner, Sunday ● sauerkraut ● any other vegetable around ● sliced pork or beef ● raisin duff or other pudding if possible ● double tot of rum	Dinner, Banyan Day ● sauerkraut ● soup as for midwatch ● ship’s biscuit ● tot of rum, wine, or arrack ● oatmeal with raisins, or oat cakes with raisins

 If any fish were caught, or an animal recently slaughtered, then that meat was used whenever possible.

Let’s just think about the 72 crew and marines.
One cook for the lot of them. 3 watches in fair weather, 2 watches in bad.
Draw up a timetable for SUNDAY. You’ve got fresh albatross, and some flour, and some fresh scurvy grass.
How did John Thompson and his assistants (probably one from each watch) feed everybody?
3 watches: 24 men in each.

HOW WOULD YOU DO IT?

HOW ARE YOU GETTING ALONG?

Name _____

Which of your fellow voyagers do you like?

Which ones do you know more about than you did when you started the voyage, and had only just met them?

Name: Captain James Cook
What I've found out: He
does/doesn't mix with the rest of
his crew. He listens/doesn't listen
to what we think. He never/always/
sometimes asks for our opinion
before he decides what to do. He is
kind/fair/mean. He likes to talk
about _____

Name: _____
What I've found out: _____

Name: _____
What I've found out: _____

Name: _____
What I've found out: _____

Now talk to the rest of your group, and get them to fill you in more on their character.

Captain Cook will be able to tell you a lot more about himself than we've hinted at here!

YOU COULD ACT OUT A MEAL-TIME, TO TEST CHARACTERS.

I am _____

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

NEWSPAPER ARTICLE

A DAY IN THE LIFE OF . . .

Write an account of one very action-packed day on the voyage. (You have been asked to do this for a big London newspaper, who will pay you a fortune for a first-hand story; so make it good, or they'll print someone else's.)

TIERRA DEL FUEGO

Name _____

You have been VERY lucky, and have rounded Cape Horn quite easily. It only took you three weeks.

You are anchored safely. Banks and Solander have taken a small party ashore; and are off for the day collecting specimens.

Without warning, the weather changes. In minutes, a cold but cloudless day becomes a howling blizzard. You can't even see the beach, never mind the men out there.

It's late afternoon.

By night-fall the storm is still raging.

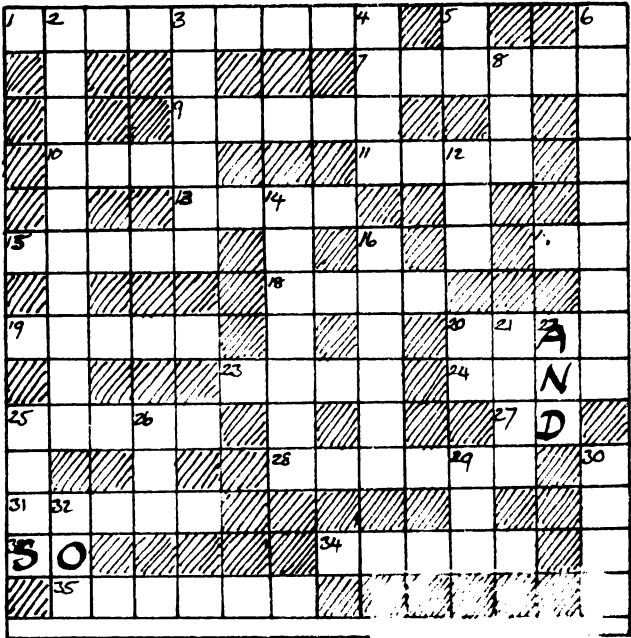
What would you do in this situation?

WRITE/DISCUSS/DRAMATISE.

(CROSS OUT WHICHEVER NOT APPLICABLE.)

SEA-DOG CROSSWORD

Name _____

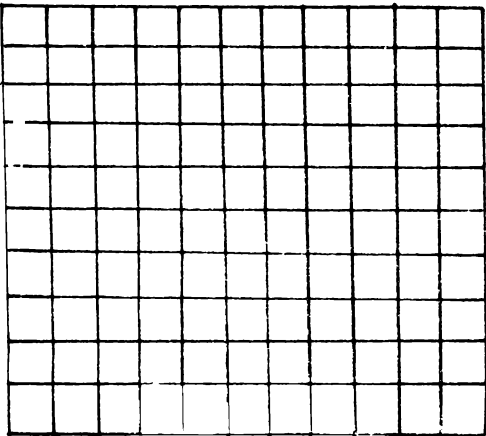


ACROSS:

- 1. Ship's name
- 7. Parkinson's profession
- 9. Nautical map
- 10. What most of the insects on board will make you do
- 11. Something Ravenhill knows how to mend
- 13. For rowing with
- 15. All around, and hopefully a drop or two to drink
- 17. "Land ____ !"
- 18. Source of the officer's milk
- 19. Capstan (what it is, AND what it does)
- 20. Vital for night navigation
- 23. Food from the sea
- 24. Without it, you're stuck!
- 25. Measure of ship's speed
- 27. Qualification a ship's surgeon has to have now
- 28. A common way to spend your free time at sea
- 31. Ship's astronomer
- 34. The very bottom of the ship's innards
- 35. You'll find one for sure sharing your ship's biscuit

DOWN:

- 2. The art of figuring out where you are
- 3. _____
- 4. The ship's dogs and cats look after these
- 5. Abbreviation of "Lieutenant"
- 6. Right hand side of ship
- 8. How you'll probably feel in rough seas
- 12. Where most of the crew would rather be
- 14. What all the ropes above deck are called
- 16. Measure of water depth
- 20. Half-way between South and West
- 21. One of the things you work out from a noon sighting
- 26. You do this to knots
- 29. Title of ship's diary
- 30. Left side of ship
- 32. You use oars to do this



Solutions:
Across: 1. Endeavour 7. Artist 9. Chart
10. Itch 11. Soil 13. Oars 15. Water 17. Ho 18. Goat 19. Winch 20. star 23. Fish
24. Wind 25. Knot 27. MD 28. Gamble
31. Green 34. Bilge 35. Weevil
Down: 2. Navigation 3. Anchor 4. Rats 5. Lt. 6. Starboard 8. Ill 12. Inn 14. Rigging
16. Fathom 20. SW 21. Time 26. Tie 29. Log 30. Port 32. Row
If this was too hard too easy make up your own!

Have a go at doing your own "hidden words" puzzle, using sea-language.
LIST HIDDEN WORDS HERE: ➡
SWAP WITH SOMEONE ELSE WHO'S FINISHED.

(WORDS HAVE TO BE → ← ↑ ↓ ↗ ↘ in straight lines. You can fill gaps with letters that can be sorted out to spell a "SOLUTION" word. If they get that, they've done the rest properly.)

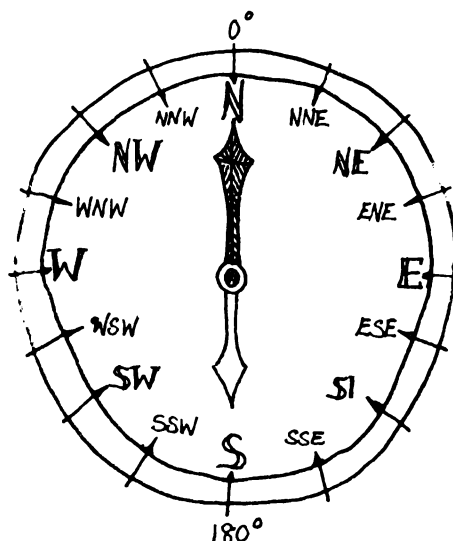
COMPASS INFO:

Name: _____

***Work out what each of these 16 compass points is in degrees, and label them all. (Yes, some of them are ... $\frac{1}{2}^\circ$).**

It is only recently that degrees have taken over from these old bearings. One of the interesting things about them is that the distance on the horizon between one point and the next — e.g. North to North-north-east — is the same as that you can see between your outstretched thumb and little finger, with your arm out straight. (Unless your hand is extraordinarily large or small.)

Try it.

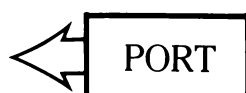


*Your ship is heading SW. You see smoke two points to starboard. What direction is that?

.....
*Your ship is heading North. How many points port will you need to turn to be heading West?

.....
*You see land stretching across the whole Eastern horizon, as far as you can see in either direction. How many points would it cover, do you think?

This is a tricky question.



You may remember which is which by PORT being LEFT — both 4 letter words.



MAKING A COMPASS SHEET

A COMPASS SHEET WILL BE VERY HANDY TO USE ON YOUR TRAVELS.

Get:

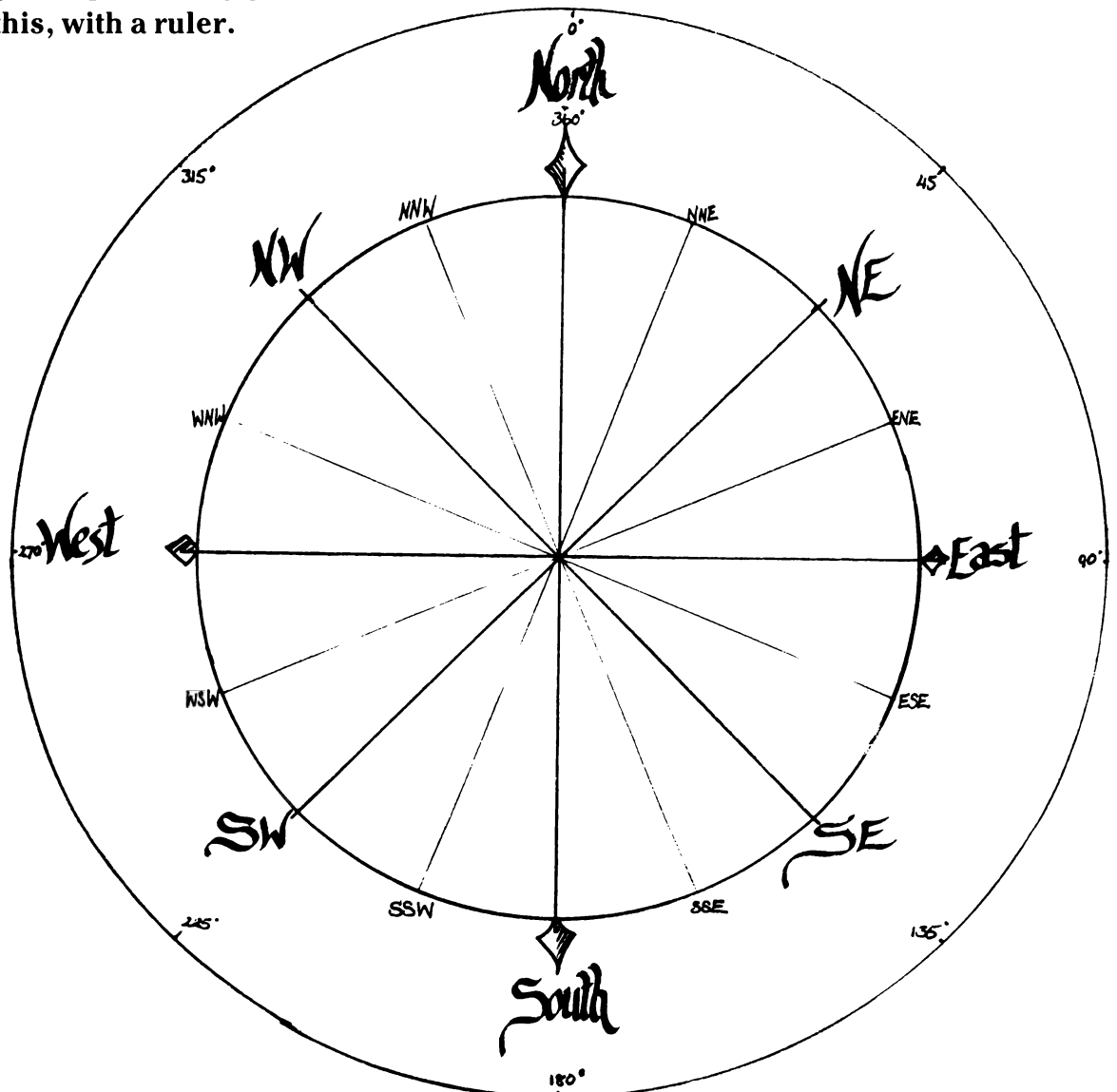
**Tracing Paper
Pencil
Ruler and**

OR

**Clear plastic
Textas — overhead
projector ones, or any sort
that won't rub off.
Ruler and Scissors.**

and then:

**trace over the
STRAIGHT LINES of
this, with a ruler.**



BE ACCURATE!

The rest is just decoration, except for the North, South, etc.

To use it:

- put the middle over

the spot on your map that marks where you are;

- make sure North is pointing North;
- work out which line

follows the direction you want to go;

- that's the direction you use.

Have a few practices and see how it works.

ORIENTEERING: COURSE-SETTING

EQUIPMENT

1. a compass (an orienteering one)
2. paper
3. pencil
4. clipboard.

All you do is fill in this:

Starting Point: _____

Mark this spot exactly with chalk, so nobody can get it wrong.

1. Bearing: _____°. _____ paces
(e.g. 250°) (e.g. 14 paces)

2. Bearing: _____°. _____ paces

3. Bearing: _____°. _____ paces

4. Bearing: _____°. _____ paces
What do you see directly in front of you? _____

5. Bearing: _____°. _____ paces

6. Bearing: _____°. _____ paces

7. Bearing: _____°. _____ paces

8. Bearing: _____°. _____ paces

You need to know how to take a bearing with your compass before you start doing this.



this takes them along a track that means they won't bang into anything as long as they've done it right.

this gets them to somewhere where they are right in front of something easily identified.

Mark where you finish up with flags, chalk, etc.

If you get a few groups to run over

your course, then you'll find out how well you set it — and how good they are at doing it.

It can be good fun to do a few different courses that end up in the same place. Get your whole class out there, together, each with a different course, and see how close they get to each other. (You can have the same starting point too as long as they go in different directions, a minute or two apart.)

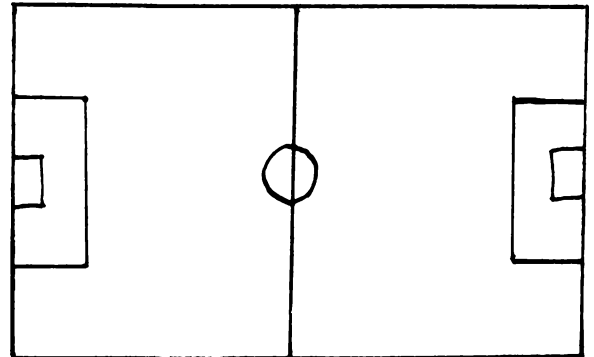
SCALE — SOME PRACTICE

Name _____

The maps you will be using for this voyage are **Scale Drawings** of the real world. “Scale” just means that everything has been drawn smaller than it really is, **by the same amount**. The **Scale** tells you what that amount is.

For instance, this is a scale drawing of a Soccer Field. 1 cm stands for 12 metres.

1. How long is a soccer field?
_____ metres.
2. How wide?
_____ metres
3. How far is it from the centre to the back line?
_____ metres



Got the idea? (1. 90 m 2. 54 m 3. 45 m.)

Do these to make sure:

These lines show roads. The scale is 1 cm to 1 km.

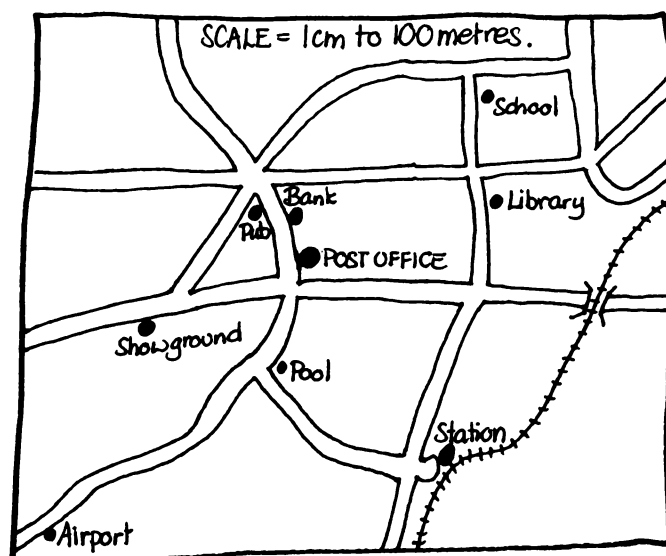
Measure them with your ruler and write down their length in KILOMETRES.

1. _____
2. _____
3. _____

You should have got the answers 6 km, 2 km and 5 km. Try this:

Choose your own scale (and write it down) to fit a line that stands for the distance, *inside* each box.

4 metres. Scale:	2 kilometres Scale:	200 kilometres Scale:	8 kilometres. Scale:
---------------------	------------------------	--------------------------	-------------------------

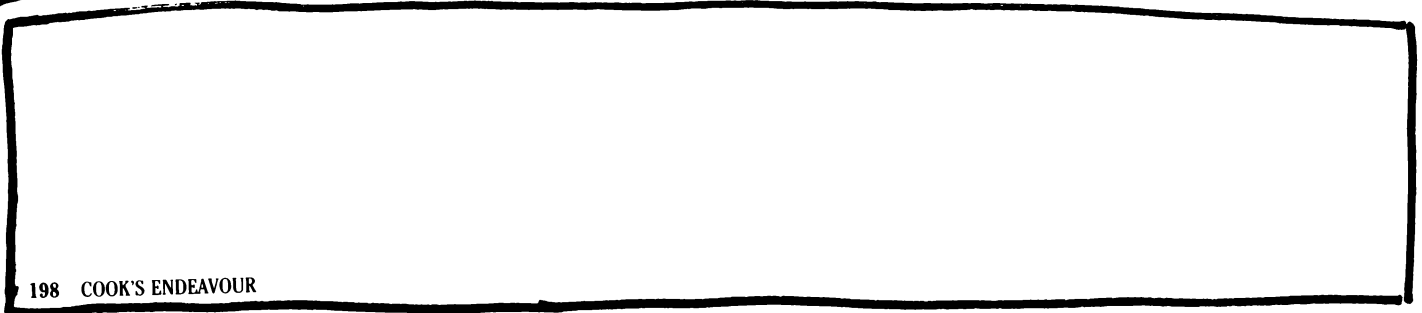
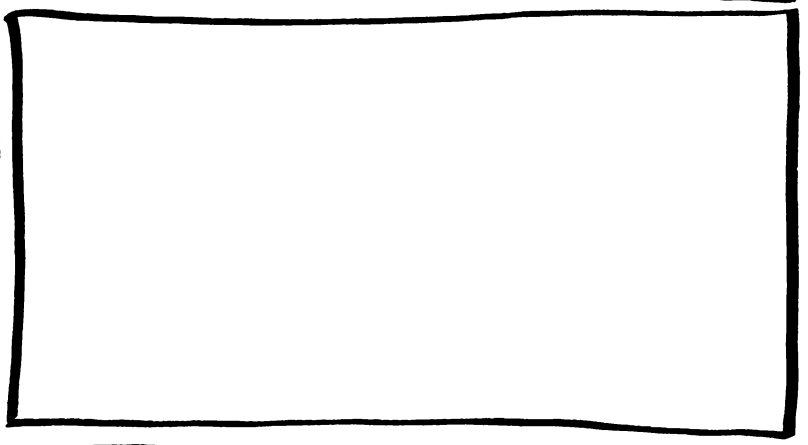
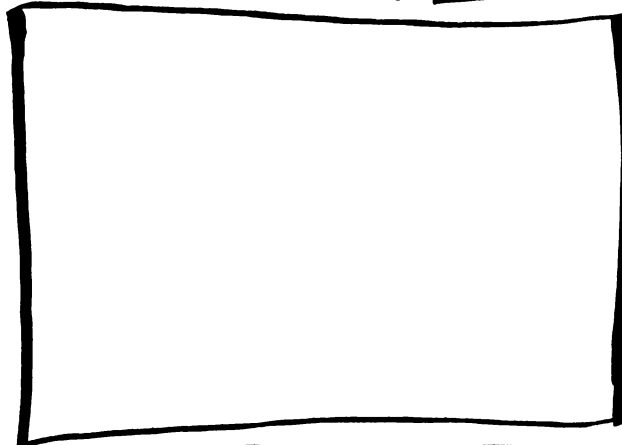
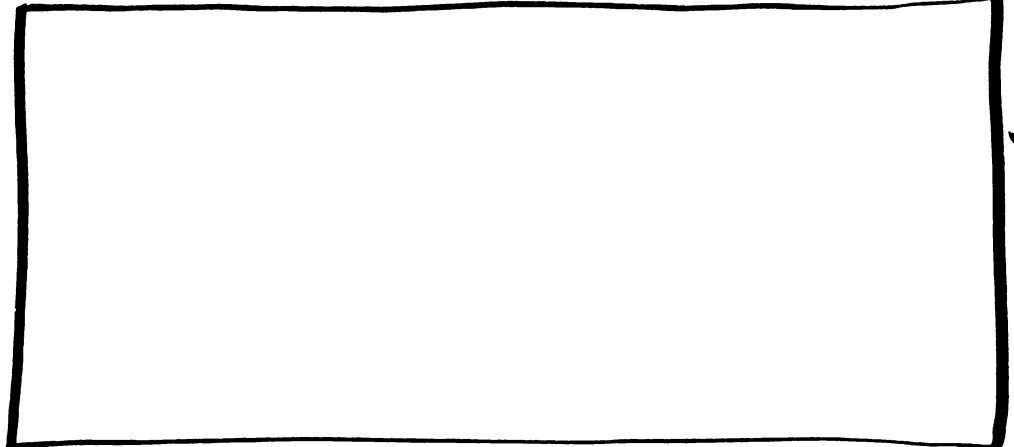
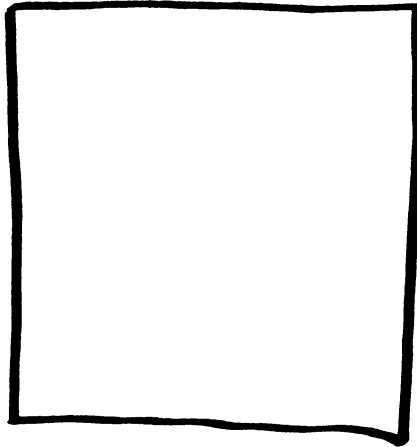
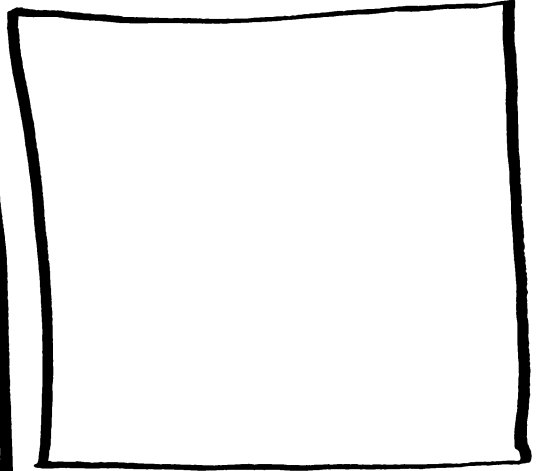
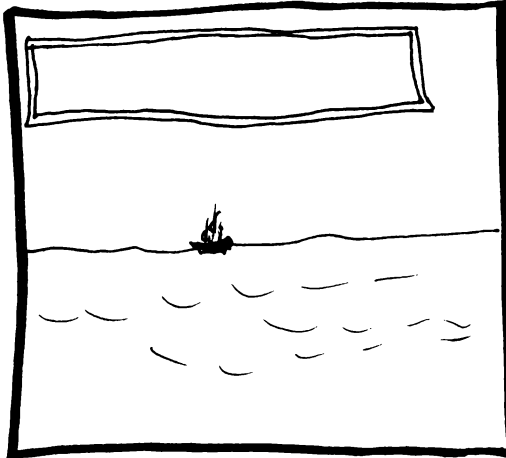
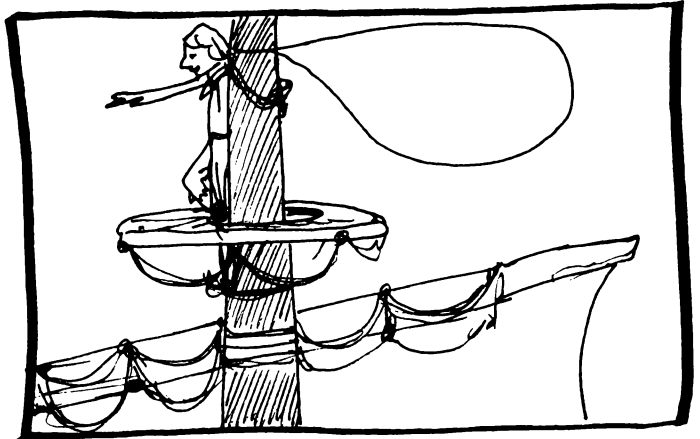
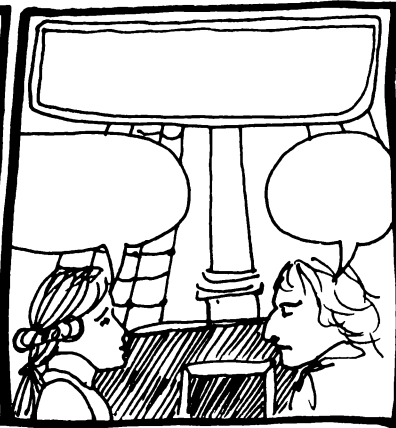


Here is a map. How far is it from the Post Office to every other place?
(In a straight line.)

- Bank _____
- School _____
- Pub _____
- Station _____
- Library _____
- Airport _____
- Showgrounds _____
- Railway Bridge _____
- Pool _____

Life on the Ocean Waves

words
by:



FOOD AND RECIPES

SHIP'S BISCUIT:

- Make bread dough as usual.
- Shape into oblong (for easy storage) FLAT (1-2 cm thick) cakes, about 10 × 20 cm.
- Cook in slow oven until hard and golden brown.
- Keep in airtight container.
- Sample throughout voyage.

NB: Were actually kept in barrels lined with oiled (water-proof) material. They had to spread it all out, scrape the mildew off and let it dry in the sun every now and then. You may too. **KNOCK WEEVILS OUT BEFORE EATING.**

NON-PERISHABLES:

Use oiled or waxed paper and cloth bags to keep:

- flour • oatmeal
- tea • onions
- raisins • sugar
- coffee (ground)

SAUERKRAUT:

- Boil cabbage in vinegar until tender.
- Pack in jars, with enough vinegar to fill spaces, and seal without air bubbles.
- Sample throughout voyage.

PORTABLE SOUP:

- Boil up some soup bones, ox-tails, etc. with salt, pepper and vegetables until there is no liquid left, hardly.
- Spread in baking tin.
- Bake in slow oven until hard. Seal in container.

TO EAT:

- Add water and boil up.

SALT BEEF:

- Take one large fresh lump of beef.
- Slice it into 1 cm thick slices, about 10 cm-20 cm long.
- Coat with salt (VERY liberally).
- Pack in a container with more salt completely filling gaps, and covering the whole thing. Seal.
- Keep in a cool place.
- Sample occasionally throughout voyage.
- WARNING: It will make you throw up after a while. It will also smell. Use an airtight container and OPEN OUTSIDE, after 2 weeks, especially.

NB: The real crew ate this after 18 months of keeping it like this.

LIVING OFF THE LAND

Cook's crew kept relatively healthy by trying out any meat or vegetable that they came across that wasn't definitely poisonous.

A copy of "Wild Food in Australia", by A. B. & J. W. CRIBB, Collins, 1976 is interesting, and you could have a go at finding things in your nearest bush.

FRESH FOOD:

See how long it keeps unrefrigerated.

CONTAINERS:

Everything was stored in barrels and kegs, except oil. Inside a keg was the best possible place. Almost waterproof, strong, durable, and theoretically airtight. If you can't get any make do with plastic. It's not the same, but you'll stink out the whole school with anything else.

FOLLOW-UP/FINISHING OFF

IDEAS

COMPARE EXPERIENCES

- each group's voyage
- all of them, and Cook's
- other similar expeditions, for instance BOUGAINVILLE, TASMAN, WALLIS and DE QUIROS

DEBATE TOPICS

- Captain Cook went too far
- Exploration is a good thing
- The Maoris/Aborigines/Tahitians should have killed the lot of them
- It is human nature to exploit each other; "Might is Right"
- The end justifies the means etc.

DISCUSSION TOPICS

- Why explore?
- What have YOU discovered?
- What is your personal opinion of
 - Cook
 - the voyage
 - your experience with this?
- What questions do you have that are still unanswered?
- If you could do something like this again, what period/person/event in the past would you choose?* (We'd be interested in any responses to this!)
- In what ways, if any, did your twentieth century knowledge help you?
- What have you found to respect in the things you've discovered about the people involved in Cook's voyage?

THEN THERE ARE THE GRAND FINALE POSSIBILITIES

- A costume ball
- Play performance
- Ship-board food "banquet" (?)
- Mock "home-coming"
- Use the "Exploration Certificate" that the computer program will print out for each individual voyage as the basis for a presentation session. Each group can tell the tale of their adventure, as well as receive a certificate. (This can be done as well as another "finale", of course.)

REFERENCES

ILLUSTRATED AND USEFUL TO EVERYONE:

These are listed in no particular order; your school library will (more than likely) have some of them.

REINITIS, Rex & Thea *The Voyages of Captain Cook* Paul Hamlyn, 1968

Lots of useful pictures, well captioned; text isn't simple to read, but is highly interesting. Photos, plates, colour reproductions of Parkinson and Buchan's drawings, maps, and implements. Excellent.

GREENHILL, Basil *James Cook: The Opening of the Pacific* National Maritime Museum, London, 1970

Well illustrated, fairly simple text.

WILLIAMS, Trevor *James Cook: Scientist and Explorer* Priory Press, London 1974

Part of a series "Pioneers of Science and Discovery".

Black and white illustrations; lots of Cook's charts, text not too difficult. Includes quite a few things the others leave out, e.g. what the voyage achieved.

PENNINGTON, Piers *The Great Explorers* Books for Pleasure (Hamlyn), Sydney 1979

Devotes 8 pages to Cook, 5 of them on "Endeavour". Good summary, wonderful selection of colour illustrations (maps, paintings and photos).

Also deals with Tasman, the Dutch in Australia, De Quiros, Torres, and Drake (all in Chapter 9 entitled "Terra Australis"), and with a terrific painting of one of Cook's ships battling tornado and waterspouts in the Pacific.

HALE, John R. *Age of Exploration* Time Life, USA 1973
One of Time Life's "Great Ages of Man" series.

22 pages on "Terra Australis Incognita", including 13 that are large print outlifted bits of Cook's actual journals, illustrated with the drawings of the artists on board for each of the 3 voyages — "Endeavour", "Resolution" and "Adventure". Well worth a read, as it puts kids in touch with the man.

***All books on Exploration are catalogued in the Dewey system as 910; Cook is mostly 910.4.**

UNILLUSTRATED, OR SPECIALISED; SUITABLE FOR TEACHERS AND/OR THE VERY INTERESTED

These are really the ones used in compiling this kit; you may like to use them — they are all available in your local library.

BEAGLEHOLE, John C. *The Life of Captain James Cook* A&C Black, London 1974

Beaglehole spent a lifetime researching Cook. You can't find a more thorough resource, in a single volume, readily available, in my opinion. He also writes well. *The "Endeavour" Journal of Joseph Banks* Angus & Robertson and NSW Library Trustees, 1962

I've only read the first volume (it comes in two). The introduction to Bank's actual journal presents a vivid picture of the man, and the journal itself is worth dipping into. He writes things like (of Tahiti): "An Arcadia of which we are going to be kings."

GRENFELL PRICE, A. (editor) *The Explorations of James Cook in the Pacific, As Told by Selections of His Own Journals, 1768-1779* Angus & Robertson, Sydney, 1969

Reproduces Cook's spelling and grammar, which is interesting but makes it difficult for kids to read. It's fascinating to read what he wrote about what he saw; and perhaps it's worth considering as a read-aloud source for discussion, particularly about Tahiti and also Australia, the Barrier Reef and New Zealand. (This is a good selection of Cook's writing.)

LEWIS, David *From Maui to Cook — The Discovery and Settlement of the Pacific* Doubleday, Sydney
Interesting, as it gives some perspective to the antecedents and heritage of Tahitian and Maori societies, only coming to Cook towards the end.

BADGER, G. M. (editor) *Captain Cook: Navigator and Scientist* ANU Press, Canberra 1970

This is a collection of papers given at the Cook Bicentenary Symposium, Australian Academy of Science (Canberra, May 1st, 1969).

One is on "Cook, the Man" (Beaglehole again), and is verbose but gives you a definite picture.

One is on "Cook the Navigator" and it gives you formulae for navigation by lunar distances (explains what they are, too) and includes a photo of a form used by Cook to calculate longitude in 1769. (It's got lots of crossing out, which is great!) Your maths teacher may be fascinated.

HUXLEY, Anthony (editor) *Standard Encyclopaedia of the World's Oceans and Islands* Weidenfeld & Nicholson, London 1963

Very useful. Lists every ocean, sea, strait, and coast, and most large inlets, sounds, etc. Also major currents, reefs, and banks. Gives you a sea-view of places, rather than a land one, and is useful to give a clearer picture of what they are seeing at each place they go.

NAUTICAL NOVELS

This list is largely the work of Sue Grey, the Children's Librarian at Ashburton Library, Melbourne; many thanks to her for finding them all, and to Camberwell-Waverley Regional Library.

PICTURE BOOKS:

RYAN, John *Captain Pugwash: A Pirate Story* London, Bodleigh Head 1957.

This is the first of the Pugwash Stories; all are entertaining, well illustrated, and good value for year 4's and thereabouts.

HUTCHINS, Pat *One Eyed Jake* New York, Green Willow 1979

Good story, good shipboard pictures. Very simple to read.

HAAS, Irene *The Maggie B.* New York, Atheneum 1975

CLASSICS:

Treasure Island

Kidnapped!

The Master of Ballantrae

Moby Dick — Melville

Swallows and Amazons

Captains Courageous

R. L. Stevenson

YOUNGER FICTION:

AHLBERG, Alan *Master Salt, the Sailor's Son* Harmondsworth, Mddx.; Kestrel/Penguin, 1981 (Happy Families)

TEENAGE FICTION:

GARFIELD, LEON *Jack Holborn* London, Longman's, 1964

Some good shipboard stuff, although most of the action happens on land. Several illustrations. The story is strange, and pretty bloodthirsty.

STYLES, Showell *Mr. Midshipman Quinn* Hamlyn (Beaver Books) London 1976

Set in 1803. A ripping yarn! The hero is easy to identify with, and the description of naval life accurate and believable.

CARTER, Peter *The Sentinels* Oxford O.U.P. 1980

The dedication on the fly-leaf reads:

"In memory of the millions of Africans taken into slavery, and the thousands of seamen in the Royal Navy who died to free them."

This gives you a pretty good idea of the book. I really enjoyed it; it's full of interesting things I never knew; the characters aren't stereotypes; and the politics of slavery/abolitionism gets a good airing. Out of "Endeavour's" period, but well worthwhile.

KENT, Alexander *Richard Bolitho, Midshipman* Hutchinson (Arrow) London 1975

Set in 1772. Really good; exciting, readable, and the first of a long series (for those who enjoy reading more about the same character). Shipboard series are excellent; "Gorgon" is about 3 times the size of "Endeavour", and her mission is to rout out pirates and slaves off Africa's West Coast.

The rest of the series are:

The Gallant Company (1777)

Sloop of War (1778)

To Glory We Steer (1782)

Command a King's Ship (1789)

Passage to Mutiny (1793)

Form Line of Battle! (1794)

Enemy in Sight! (1795)

The Flag Captain (1798)

Signal — Close Action (1799)

ACKNOWLEDGEMENTS:

The sources for this project were originally going to be limited to the sorts of things anyone could find by going on extended trips to their local library; the rationale for that was simple: to make it possible for you, and your students, to answer questions raised in using the kit.

The trouble with that is, I soon began asking myself the sorts of questions the students will ask. i.e. How did all those people FIT IN? Where did they sleep? What did the marines **do**? Where could Cook

(6' plus) stand up straight? What did they eat, and when? etcetera.

For the answers to these, and other knotty questions, particularly navigation, I owe it all to:

Kate Minkoff, of the CAE (Council for Adult Education) Community Programs, who referred me to:

Charles Treleaven, Curator/Manager of "Polly Woodside" and the Melbourne Maritime Museum, lecturer in Navigation at Sea, and gold mine of nautical information, enthusiasm and helpfulness; who introduced me to

Barbara Cohen, Chairman of "Polly Woodside" Education Committee, History teacher, and another extraordinary human resource, who told me to ring up

Karl Marquardt, maritime artist, model ship-maker, and amateur expert on the sailor's lot in the days of sail.

Then there are several teachers who added their enthusiasm and knowledge of what would work and what wouldn't.

Vivienne Wearne, Annette Bunyevitch, Brenda Kanowski, Heather Martin of Mornington Peninsula Community School. Thanks for your help and encouragement (and the September 1971 National Geographic);

Sandy Barnes, who thoroughly and critically appraised the working copy.

Lorraine Tropp, who managed to convince me that writing historically in the present tense was a good idea;

Roz McKenzie who helped with the idea of what is intellectually feasible for junior and middle secondary novice navigators. Then there is, MOST IMPORTANTLY,

Dr Alan Frost: Senior Lecturer in Australian History at La Trobe University. Not only did he spend hours making sure the facts here are facts, but also corrected many spelling mistakes, grammar, and punctuation errors, AND added several interesting and useful bits of information himself. Thank you very much for all that, Dr Frost.

Sue Grey — for your help with children's books that are suitable. And: my Mum, for looking after Ross so well, and so often.

Thank you, one and all.

Sarah

